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Virginia's Wildlife and Related Natural Resources
and to the Betterment of
Outdoor Recreation in Virginia*

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PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second St., Richmond 13, Va.

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JANUARY

Volume XXIV/Number 1

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COVER: Although the raccoon is best known to "coon" hunters and is seldom seen by others because of its nocturnal habits, its characteristic masked face and ringed tail are familiar to almost everyone. In its favorite habitat, near water, it hunts crawfish, snails, frogs, and insects. It adds eggs and corn to its diet when the opportunity presents itself. Our artist: Duane Raver.

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EDITORIAL

BESIDE STILL WATERS

*He leads me beside still waters;
He restores my soul.*

DON'T fool yourself about it. What do you *really* want from your outdoor recreation?

Do you think you prowl the woods, wade trout-streams, or frequent your favorite bass water only to put a lot of meat, or even just a choice bit of it, on your table? Surely not. The day of the meat hunter is long past. Outdoor recreation is expensive. The local market is convenient, and food is a lot cheaper there.

Is it not, rather, the quiet places of the earth's surface that you seek? And is it not for a much deeper and more compelling reason than merely to satisfy your appetite for meat?

Isn't what you really seek the glint of sunshine on a pool, the shady glen, the majestic sweep of sky and hill?

Seek and you shall find! We believe that. Yet most of us often rush so fast—toward death—that there is not time to seek what really makes life good. There is a mania for speed—or progress—toward what we are not always sure, but time is *running* out! We drive ourselves, down the highway of life, so intent upon the traffic and in such fear of being late that we frequently miss a fleeting glimpse of paradise right here on earth as we pass by. And we won't pass this way again.

It is refreshment, and restoration of body and soul, after the damaging heat and pounding of the race, that we all need. That is what *you* really seek when you assemble your tackle or uncase your gun. Don't try to fool yourself about it, and you won't make the sad mistake of going about your hunting and fishing at the same feverish pace from which you seek escape for an hour or a day.

Our wildlife resources provide ample opportunity for high quality recreation, whose usefulness and attractiveness need not depend entirely upon the taking of a large quantity of game or fish. Whether *your* outdoor sport provides that high quality recreation depends upon *you*—mostly upon your knowing what it is you really want.

There may be a full bag or a full creel at the end of the day, sometimes, and for many of us that chance adds an awful lot to the outing. What we really seek, though, are green pastures and still waters, where our very souls may be restored. May they always be there. We need them badly.—J. F. Mc.

LETTERS

The Wardens' Side

SINCE Mr. Henry C. Page lambasted the game wardens last month (see November 1962 issue of VIRGINIA WILDLIFE) and since the wardens most likely will not retaliate, and since I have a son who is a warden, I would like to point out one or two things on the other side of the fence.

First, Mr. Page should be very proud that he has not seen a warden "back in the woods." The wardens are limited in number and have to concentrate on hunters with bad reputations. The fact that he has not been approached is undoubtedly due to his fine character and reputation for being such a wonderful sportsman. (There is one other type of hunter that the wardens don't bother. My other son can't carry enough shells to the field to get a dove limit. They've never checked him, either.)

Second, Mr. Page stated that he had seen one man kill 40 doves in an afternoon. To whom did he report this? Or isn't it true any longer that one with knowledge of a crime shares the guilt?

Until the hunters can realize that the future of wildlife is in their hands the relatively few wardens that the state can afford can do little. One may lose a friend by reporting him for killing 40 doves in an afternoon, but who wants a friend like that, anyway? And until the hunters themselves decide to stop the game hogs, there will always be game hogs.

Sarah G. Johnson
Charlottesville, Virginia

Error in Shadow-Tip Method

DEPENDING on the time of day, the season and the latitude, the accuracy of the shadow-tip method of direction finding described in your October issue can be far worse than the 3 to 7 degrees claimed by the author.

Consider the equatorial regions at the solstice seasons. Near sunrise and sunset the shadow tip will move at 23-1/2 degrees to the East-West direction.

Consider the polar regions during the season that the sun is a circumpolar star. At local noon and midnight the shadow tip is indeed moving on an East-West line. However, since the path of the shadow tip is an ellipse (nearly) there is an hour before and after local noon at which the shadow tip is moving on a North-South line for a 90 degree error.

Consider Virginia at this time of year. Do we not see that as the sun sinks in the southwest the tips of all shadows are speeding off to the northeast?

The 3 to 7 degree accuracy claim obviously is under some unspecified constraints. To make the claim without specifying the limits of validity, or even that there are limits of validity, is, to put it kindly, misleading.

Frederick Cyril Grant
Newport News, Virginia

THIS seems to be an opportune time to compliment you on your publications of VIRGINIA WILDLIFE. They are attractive, informative and well written. In short it takes a seat second to none.

David F. Whitesell
Hampton, Virginia

(Continued on page 27)



TIDES THAT TURN

By FRANK P. BRIGGS
Assistant Secretary of the Interior

RECENTLY I sat on the beautiful Atlantic beach and watched the surging waters of high tide with white crests on every dancing wave. I sat there and marvelled: everything seemed calm; everything seemed serene. From all angles the big ocean was a scenic masterpiece.

But then the tide went out.

Gone were the sparkling waters, the dancing waves and the white crests. Gone were the beauty, the calm, the scenic picture and in their places were debris, rubbish, filth and stench.

As I got in my car and started home I thought of the wonderful ribbons of highways in the nation, how well they serve those bent on business or relaxation, and their value, economically and esthetically.

And then again the tide went out and I saw 37,000 human beings dead on the roads each year, nearly 400 killed on this, a holiday.

I drove past an area which three months before had been beautiful with native trees, wild flowers and here and there a bit of wildlife. But here again, *the tide went out*; the bulldozer had moved in.

Then I pondered how many times in the world of fish and wildlife the tide has gone out and left behind a litter of waste and ruin.

There had been the rippling streams and the happy fishermen—but man-made pollution poured in and *the tide went out*.

There were the carefree birds chirping in the trees along the streets and roads, passing their happiness on to you and me—but the spray machine came in—and *the tide went out*, leaving in its wake countless numbers of birds which would flit and chirp no more.

When the hardy, white wood rangers crossed the Appalachians they found the Senecas, Ottawas, and the Wyandottes generally dependent upon a combination of marsh and woodlands for their winter meat. Even the first white settlers respected the Indians' priority or shrank from the hard work of trying to subjugate these wetlands when there was still so much inappropriate black soil forest land which could be cleared and cultivated.

But then the tide went out. Great power-driven, earth-moving machines like the dragline and the steam shovel came into use in the 1890's. Without any preliminary soil tests great ditches were driven through the central axis of the swamp and large collecting laterals stretched out from the center ditch like the bones of an exposed mastodon.

The skeleton of ditches forecast the doom of the 100,000 acres of marshland if man had but read the scroll correctly.

In areas where once there were native trees, wild flowers and a bit of wildlife, the bulldozer has moved in, and the tide gone out.

Commission Photo by Kesteloo



Where once there were carefree birds chirping in the trees, the spray machine came in leaving countless numbers of birds which would chirp no more.

Commission Photo by Kesteloo



After the ditching, fire was used to destroy the forest for quick reclamation but the fire also burned into the peat and pitted it so effectively that many acres could not be farmed.

The first grain crop exhausted the nutrients of the soil, so the area was abandoned and lapsed into a "Hell's half-acre." After successive peat and forest fires the area now stands a desolate and forbidding landscape. Repeat this an endless number of times on a smaller or larger scale and you have the result of a lot of our early drainage schemes.

So many times the tide goes out and discloses ruin and desolation—dead and dying waterfowl, their plumage lost in a mass of tarry oil, their feathers matted, their ability to fly or to swim gone; fish killed by pollutants; animals slaughtered needlessly. So many marshlands lashed by canals with spoilage ruining that which survived the digging—so many million potholes drained without valid reason—so many draglines used where traplines should have been operated. Pollution in so many forms—domestic sewage, industrial wastes from canneries, factories, paper mills and mines; smoke and gas fumes; radioactive fallout; silt from eroding farms—all the unmistakable forms of a fast receding tide.

In almost every instance man must take the responsibility for the foul mess we see when the tide goes out. What, then, can man do for correction?

First and foremost, we in the conservation field should do a little soul searching and ask ourselves some questions, such as—

Are we keeping abreast of agriculture and industrial progress to the extent that we can protect our wildlife potentials as civilization marches on?

Do we believe enough in ourselves and sufficiently in the idea of conservation to attack sometime seemingly hopeless situations and tell ourselves that wildlife values can be protected or created if we just work hard enough?

Thousands of mistakes have been made in the past. Most of those were not the fault of the conservationist. But any mistakes in the future will be upon our shoulders and we had better take inventory to see whether or not we have the will to assume our responsibility.

The situation is not all hopeless. We look at various parts of the country and we find thousands, yes, tens of thousands of citizens, looking for a place to fish and finding none.

And then the tide comes in.

And we find more than 200,000 fishing lakes and farm ponds created by states and farmers where there were none before, and we find those tens of thousands now casting their lines where none had cast their lines before.

We look around and we see hundreds of good fishing waters ruined by rough fish or by excess aquatic vegetation, and thousands of anglers longing for some place where they can really spend a day at old-time fishing. *And then the tide comes in.* And we find that those hundreds of fishing areas which have been ruined by faulty management or no management at all have been reclaimed and once again the fish are biting and the world looks bright.

We look and see the nation's deer hunting apparently on the way out, these magnificent animals seemingly destined to become oddities seen only in parks or zoological gardens. Things look bad for the deer, *and then the tide comes in* and we find that there are more deer now than ever before and that by proper management these species can be on the earth as long as man.



Commission Photo by Kesteloo
Deer hunting apparently was on the way out. Now there are more of these magnificent animals than ever before.

Thirty years ago the waterfowl of North America were in trouble. They had been slaughtered spring and fall, winter and summer. They had been hit with drought and blizzard, their habitat had been lost to them by millions of acres. *And then the tide came in*, and the American people awakened and now we have a fine national and state refuge system, an enlightened public and more than a fighting chance to protect this resource and assure its continuance for future generations.

We have just finished our second in a series of conferences with Canadian wildlife and agricultural interests on the problem of production of ducks, especially in the prairie provinces. We have found a mutual interest, a mutual desire, and we believe that we will find a mutual solution for the production problem.

Let's look over some of the tools we have at our command. We have an ever-increasing number of fish and wildlife scientists on federal, state, and private levels. We have a growing volume of scientific evidence which is helping us meet the many problems. We have such things as Federal Aid which is helping states do a great job in the restoration of fish and game; we have federal and state

Thirty years ago waterfowl were in trouble; and their plight brought about a fine refuge system, an enlightened public, and U.S.-Canadian cooperation on the problem of prairie duck production.

Commission Photo by Harrison



organizations which are making good headway in keeping abreast of industrial and agricultural development. Our own Fish and Wildlife Service makes hundreds of studies each year on the effect of small and large watershed developments, flood control plans and reclamation and power projects. Congress has helped with the Coordination Act and the various states are in shape administratively and financially to do a better job than was thought possible three decades ago. We are in shape to carry on.

Drainage and drought have ruined or obliterated thousands of potholes and marshlands once productive of waterfowl, muskrats and other wildlife. These potholes have ebbed and flowed so to speak through drought and rain. Then man came along with his program of drainage and that program had a big, big start before other men came along with another program to acquire pothole areas and hold them for waterfowl. But late as it is, and shaky as it was at the start, the start has been made and a positive program of acquisition and leasing, accelerated by the increase in the cost of the duck stamp and by federal legislation providing 105 million dollars on a loan basis, will save a lot of pothole area for posterity. Private organizations, various duck clubs, and state conservation departments can and are doing their part. Research can develop ways of creating productive waterfowl areas in wastelands, and better managing our still-remaining wetlands will help keep the waterfowl resource abreast of the demand.

Public assistance to private owners of some wetlands may serve to keep the marshes from being drained, at least until the need of agricultural food production increases beyond the present ability of improved agriculture to provide. There are other problems to be sure, but there are other solutions for them.

Let's stop a moment and view some of the white crests of waves presently riding the tide.

The Atlantic Flyway Council has recommended the acquisition of 29 waterfowl areas in the Southeast, totaling 280,000 acres. Seven of these areas have been or will be studied in detail and presented to the Migratory Bird Conservation Commission for consideration. These seven areas total 90,000 acres. The Mississippi Flyway Council gave priority rating to seven areas totaling 83,000 acres in the southeastern states. With the additional funds to be made available through the loan bill, the acquisition program will be accelerated. When the tide goes out, this program will be substantially completed.

Reactions to the early results of the Foreign Game Introduction Program are somewhat varied. We have a feeling of optimism from the apparent establishment of blackneck-ringneck crosses and back crosses in Virginia in areas where the ringneck releases failed. This development may lead to extending the range of the pheasant further into the Southeast. Early successes of the black francolin in southeastern states give some reason to be hopeful that this species may also become established and add a valuable increment to our hunting fauna. Success with game farm production of the red junglefowl in Oklahoma, the kalij pheasant in Virginia, and the bamboo partridge in Missouri gives us further reason to be optimistic. Less favorable early results with the Reeves pheasant do not as yet rule this species out as a prospective new game bird in some wooded areas.



The apparent establishment of blackneck-ringneck crosses on experimental areas in Virginia may lead to an extension of productive pheasant range into the Southeast.

We are hopeful that from this array of new birds at least one will be successful to the extent that it will provide additional hunting without interfering with native species or becoming pests in agricultural lands. From our studies in their native ranges, we are fairly sure that neither of these unfavorable developments will occur. We must point out, however, that the production of broods in the wild is not enough to assure us that a new species will become established in its introduced range. It merely means that the first requisite has been met. We shall be highly interested in developments in the next few years. In this case, the tide is "in"; we shall await the scene left when the tide goes out!

The problem of managing and controlling exotic nutria has cropped up in several southeastern states in recent years. Nutria have not only been destructive to crops, particularly rice and sugarcane, but have also seriously competed with muskrats and waterfowl in some places where they have become established. Areas of Louisiana are the most seriously affected, but nutria are also a problem in Mississippi, Texas, Florida, North Carolina, and even to some extent in Maryland and Virginia and other states. The Bureau of Sport Fisheries and Wildlife has funds this year for employment of a man to work with state organizations in the South to develop control methods. He will soon be hired and stationed in Louisiana. He will concentrate on that area, but will in time be available to other south Atlantic and Gulf locations. There seems to be no quick and easy answer to this problem, but it will be vigorously attacked.

Perhaps the tide can be as we make it. It will come in and go out today, tomorrow and for all tomorrows to come. Let us remember—the high tide of today may be the low tide of tomorrow. We cannot stop it but we can control that which it leaves behind. We have chosen so many times to so conduct ourselves that *when the tide went out* there was debris, rubbish, filth, and stench of our own making. Thank God, there were other times *when the tide came in* that we found clean water, green fields, good fishing and fine hunting. The tides of tomorrow will reflect our actions of today.

Adapted from an address before the 15th Annual Conference of the Southeastern Association of Game and Fish Commissioners, held October 22-25, 1961, in Atlanta, Georgia.

Southeastern states never enjoyed the success achieved elsewhere in the nation with the introduction of the Chinese ringnecked pheasant. Since 1958 the Game Commission, in cooperation with the U. S. Fish and Wildlife Service, after careful habitat studies in the state and abroad, has been experimentally introducing other foreign game birds. One of these, an Iranian blackneck-ringneck cross, has been doing so well (see "Virginia's Foreign Game Introduction Program—A Progress Report" by Herman J. Tuttle, *Virginia Wildlife*, February, 1962) that biologists are becoming cautiously optimistic. Virginia at last could be at the threshold of the era in which pheasant hunting becomes a reality in the state. The following historical account of pheasant hunting in Nebraska is presented to give Virginians a preview of what ups and downs may be in store, if some other states' experience with pheasants is repeated here as a result of the blackneck pheasant introduction.

The Nation's Longest

By BOB MORRIS

THE YEAR was 1927 and Nebraska hunters were anxiously awaiting the first open season on pheasants. Wheeler and part of Sherman County were the areas open and hunters were to be allowed five ringnecks. When the three-day season ended, the number of birds bagged was totaled and came to a surprising 5,000. The following year a 10-day season was held. The pheasant was here to stay.

Many changes have been made since the 1927 hunt. Compare it with the 1962 season that opens October 27. There were three days then; there are 86 days this year, the longest pheasant season ever held here. One county and part of another was open in 1927. Now the entire state is open. Five birds were all that were allowed in possession. A generous limit of 16 is offered today. And when the long hunt comes to a close next January, an estimated million-plus ringnecks will have been bagged.

Much of the early pheasant management in Nebraska was concerned with attaining state-wide distribution. In the early 1900's, scattered releases were made in Howard County. By the mid-20's birds in Howard, Sherman, and Valley counties had increased to the point where they were trapped and released in areas where pheasants were less plentiful.

As the pheasant range was extended, hunting was allowed in more and more counties. The entire state was opened for the first time in 1937. From 1938 through 1942, open seasons were held in from 76 to 89 counties. Bag limits from 1927 through 1942 were five birds in possession. Hens were legal targets in the state from 1930 until 1941. But during this 12-year period, pheasants continued to increase.

Hunting went into high gear in 1943, with the entire state open and the season running a full 70 days. But it was just a taste of things to come. In 1944 and 1945 the season was boosted again, this time to 80 days. The state was zoned in 1946, running 79 days in 68 counties and 72 in the remainder of the state. Bag limits from 1943 to 1945

were 5 roosters a day and 10 in possession. Seven cocks were allowed in most of the state in 1946.

In 1947 the bottom dropped out, the season running only 10 days with shooting hours from noon to sunset. The bag limit was cut to 2 roosters a day. It was a little better in 1948 with 21 half days and a daily bag and possession limit of 3 cocks. The 1949 season showed another drop with the season open in only 68 counties and running 10 half days.

The upswing began in 1950 when the season was extended to 23 days and the daily bag and possession limit raised to 4 cocks. From 1951 to 1955 the seasons saw a high of 38 days and a low of 10 days, while the bag and possession limits fluctuated between 2 and 5 cocks. The big change has come in the past 6 years, from 23 days and a bag limit of 3 cocks and 6 in possession in 1956 to 86 days and a bag limit of 4 and possession limit of 16 in 1962.

Since 1958 Nebraska hunters have consistently harvested over a million pheasants a year. The 1961 season was the best in recent years, with 1,298,000 roosters taken.

Little was known about pheasant management in the early years. Today sound and realistic programs have been developed. Many years of research have gone into learning the proper methods of pheasant management. One fact stands out above all: the pheasant population can not be overshot when only the cocks are harvested. Even with an 86-day season, Nebraska will not utilize the full sporting potential of its No. 1 game bird. In a normal year hunters harvest about half of the surplus roosters. Actually, sportsmen could bag 90 percent of the cocks and still leave adequate ringneck numbers for breeding purposes.

The length of season has little effect on the number of birds taken. Up to 65 percent of the roosters harvested in any season are taken in the first 10 days. The remaining harvest occurs over the rest of the season with insignificant numbers bagged during the last half of long seasons.

Pheasants start out each hunting season with the number of hens and cocks approximately equal. Pheasants are highly polygamous. Experience and research have proved that one rooster can service up to 15 hens. A 90 percent hunter harvest of the cock pheasants is perfectly safe and has no retarding effect on the following spring's production of young birds.

Nature, not hunting, regulates the pheasant population. The annual turnover in a pheasant population is high—from 65 to 70 percent. A brood of 10 birds in the spring will be reduced through natural causes to three by the following autumn. *Hunting does not change these losses; it merely replaces them. Failure to harvest adequately simply results in the waste of this resource.*

There is little man can do to control natural mortality factors. But he can control environment so that pheasants have the proper habitat to provide food, shelter, and safety. In recent years, for example, the Soil Bank program has added thousands of acres of suitable pheasant habitat and has been a contributing factor in increased pheasant production.

Yes, pheasant hunting has changed considerably since 1927. So has management. And because it has changed, Nebraska sportsmen are enjoying the most generous season offered in the nation.

Adapted by permission from October 1962 *Outdoor Nebraska*, published monthly by The Nebraska Game, Forestation and Parks Commission.

Just Right For Coon

By LULA P. GIVENS
Christiansburg, Virginia

THESE are the nights when I remember the coon hunts. Mother and I would be early in bed downstairs . . . perhaps asleep. Our dogs would bark. Laughter and shouts would sound down the hollow in the shivery night. Presently, there would be a knocking on the door.

Bounding down the stairs, two steps at a time, Jay, one of my brothers, would throw open the door. Lantern light would shine into the dark hall from outside. There would be loud greetings and more dogs barking. Everyone would talk at once.

"Come on. Let's go coon hunting. The dogs have one treed. Hurry! The moon's just right!"

Jay would run up the stairs, and he and Brackett would jump into their clothes and clump down again.

Joining the others, they would head for the forested ridges or the leaf-loamy ravines. From one of those, barking dogs proclaimed loudly that they had one "treed."

Gathering roasting ears for my mother, in the summer, I had seen the cornfield after a raid by the coons the night before. They had wantonly pulled down stalk after stalk, taking only a bite or two from the milky ears, then tearing down more stalks to ravage. The field looked like it had been broken into by the hogs or cows.

I knew the men had been "laying" for the coons ever since then. The hunts would serve a double purpose. The men would catch some coons . . . they would get out into the mysterious night . . . "when the moon was just right."

If the dogs couldn't start a coon, sometimes the men would build a fire outside the forest and sit around it . . . swapping tales and chewing tobacco . . . and listen for the chirring, owl-like "whoo-oo-oo-oo" of the coons.

Sometimes they had a better excuse for loitering—waiting for the hounds to come in. The hounds might have left the trail of the coon for that of a fox.

The men could tell this by the sound of the hounds as they gave voice, but I could not. My brothers always swore the hounds cried, "Coo-n-n . . . Coo-n-n . . . Coo-n-n!" when hot on the right trail. I never believed this. I'd often lie awake and listen to them as they ran between the hills or on the mountain, but the music and the meaning of their cry were lost to me.

The wily coon many times eluded the hounds and hunters. Leaving the ground, it would run on fallen timber, or head for water where its track and scent would be lost.

Besides, it took a very brave hound, indeed, or a very stupid one, to follow a coon into water. They could lose the coon's trail in shallow water but they could lose their lives in deep.

If the coon reached the Frog Pond, a favorite haunt in the meadow, he was safe. The hounds barked angrily, and a few started boldly into the water, but after awhile they returned to the men at the fire. Or, if one foolishly got near the coon, he was grabbed by the muzzle and his head held under water by the dark, sinewy paws of the coon. If he were lucky, the dog broke away, but more likely his body would be found days later floating on the water.



Commission Photo by Kesteloo
If the coon had to take to a tree, a man or boy would climb and shake the black-masked fellow from his refuge.

Perhaps, chased closely by the hounds, with the men running and yelling after them, the coon would run hump-backed through the trees.

Following the hunt mentally, I knew no one would run faster or yell louder than my brothers. I could almost see them in the moonlit forest where the shadows were antic and unreal . . . and the night noises were strange and weird.

If the coon had to take to a tree, the hunters got him. His gleaming eyes betrayed him. A man or boy would climb the tree and shake the black-masked fellow from his last refuge. Circling, baying hounds would pounce upon him beneath the tree. That coon's frogging and corn-eating days were over.

Toward midnight, men, boys, and dogs would come trooping by again. When I heard them coming, I'd get up and open the door for my brothers. They and the other hunters were subdued and satisfied. The hounds were quiet, sad eyes drooping, long ears flopping.

Someone would be carrying the dead coon home for skinning. I'd put my hand on its soft gray fur, and look at its black-ringed bushy tail, and the narrow whiskered face . . . and feel quick sympathy for the little robber. Perhaps a mate and family awaited him in a nearby hollow tree.

My brothers would return to bed for the short period left for sleep. My mother would sigh with relief that they were home.

The next morning, at the one-room school, Brackett and the other boys would tell the teacher about the coon hunt of the night before.

Laughingly, she would tell us of hunts in eastern Virginia. She had once taught there. Foxes were hunted in the daytime with a pack of hounds . . . and people, men and women, chasing the fox on galloping horses.

"Riding to the hounds!" she called it.

"What makes the moon just right?" I'd ask.

"The mood you're in," she would reply.

FRESH START AT BRUNSWICK COUNTY LAKE

By ROBERT G. MARTIN
Chief, Fish Division

Commission Photos by Kesteloo

BY late afternoon on Friday, November 16, the last dam board had been removed and all that remained of the 150-acre Brunswick County Lake was a little water in the old stream channel.

Fishery biologists had thoroughly investigated the causes of poor fishing in the lake. Their diagnosis showed the fish population, not the lake itself, at fault. Their prescription: drain it, and start over.

Fish population samples taken with nets and rotenone had shown the biologists what had happened since the newly stocked lake was opened to public fishing in 1955. After seven years an unproductive, static balance had been reached between the total fish population and the lake's supply of food organisms. In addition, between the several fish species in the lake there was keen competition, and undesirable rough fish were winning out over the desired pan and game species.



There had to be a fresh start. The lake was drained until all that remained was a little water in the old stream channel.

Almost half the weight of the samples was made up of such fish as bull heads, suckers and golden shiners. Most bluegills and crappie in the samples were too small to interest fishermen; yet these little pan fish were not young. They were stunted. Microscopic examination of their scales showed that three-year-old crappie averaged only six inches in length, while bluegills of the same age ran less than five inches. Predatory game fish which could have helped keep the rough and pan fish populations in check were scarce, and were not making any headway through reproduction.

The situation biologically was just as bad as the fishermen's empty creels suggested it might be, and no natural mechanism was at work to improve it. Fish that nobody wanted were going to take over the lake completely if nothing were done.

Prescribed treatment for the "sick" fish population con-



Using copper sulfate, Commission biologists killed and removed tons of undesirable rough fish from the lake last October.

sisted of three steps: get rid of the rough fish; thin out the too abundant, stunted pan fish; and get a viable bass population at work keeping the prey species in check and producing a catchable crop of game fish.

Step one was taken in October. Game Commission biologists had discovered that copper sulfate, a commonly used municipal water treatment chemical, will kill undesirable rough fish at concentrations too low to harm game and pan species. Brunswick County Lake was drawn down from its normal 150 acre size to about 30 acres, and the remaining water was treated with copper sulfate at the rate of two parts per million. A whopping three tons of rough fish were removed to make room for more desirable types.

The thinning of the pan fish was accomplished on November 16, when the lake was drained as low as possible. Literally tens of thousands of stunted fish were removed. This will result in a great increase in the food available to each fish remaining in the lake, and should produce a spectacular increase in individual growth rate during the next few years.

To complete the treatment, all bass and pickerel captured during the removal operation were returned to the water and as soon as the lake is refilled it will receive an additional stocking of bass.

Brunswick County Lake will remain closed to fishing during 1963 to allow a crop of fish to reach catchable size as a result of this three step population management operation. After this fresh start the lake will be opened to public fishing again in 1964, and with a little help from the biologists in controlling rough fish from time to time, fishermen and normal predator-prey relationship between game and pan fish should keep the fish population in a healthy productive balance for many years.

Thinning out the stunted pan fish, so that those remaining could find enough food to grow, took place in November with the lake as low as possible.



Our Wounded Mountains

By CHARLES K. STALLARD
Charlottesville, Virginia

WALKING into the Wise County courthouse the other day, I was very disturbed by a sign I found there on the first-floor bulletin board. In bold black letters it said, "Leave Seed Trees. It Is The Law." I found this immediately revolting and disgusting, but at the same time very enlightening.

For those who don't know, Wise County is in the heart of the coal fields and in the past few decades a process known as strip mining has become quite prevalent. Strip mining entails exactly what its name implies, stripping the land of everything down to the level of the coal itself.

Here in the mountains the "rim cut" method is employed, whereby a bull-dozer and other heavy equipment slice into a mountain until its black bowels have been exposed. Once the coal has been located in this manner, the machinery follows the coal "seam" around the contour of the mountain.

What nature has spent centuries arranging and preserving, man with his greedy fingers rips and tears from her clutches. The fair dame is stripped of her fine green, multi-flowered, multi-scented dress, her forests.

As if this were not enough, man then is so base, so greedy, that he will not apologize or offer to make amends for his abuse. The result is, too obviously, wasteland: land even more useless than desert land. A desert will flourish if you give it water. Our stripped mountains will not produce under the most favorable of climates.

I know the fact is immediately called to mind that this is private land I am talking about, and the law allows one to do with his private property what he pleases. This, tragically, is what we too often accept. For a nation supposedly founded on Christian principles, this should not be the case.

No piece of paper, regardless of how official it is, gives anyone the right to do to the mountains of southwest Virginia what has and is still being done. It is no less than robbery. Who does this land belong to? From whom has it been stolen? Posterity. This earth and everything about it belongs to the future, to your children and mine. We are here only for a short while and we do have the privilege of using what has been put here, but not of rendering it useless.

Whenever I go back to my home in Wise County, the most defeating fit of depression seizes me, and I have to wonder what kind of people I have been associated with all my life. Certainly no intelligent person could live here without crying out in protest. Intelligence could never tolerate such wanton destruction. Yet, I hear no angry voices, not even a murmur.

No Christian people, with their hearts, minds, and souls turned to God, could live here without rising up in arms. The treatment of our mountains and landscapes is nothing but bold defiance of the greatest of all commandments, "Do unto others as you would have them do unto you."

Looking from the High Knob Observatory back over Wise County, one is reminded of a moth-eaten fur coat. The streams no longer run swift and clear. The trout and bass no longer haunt the deep. There is no deep; only a shallow mud slick.

Do I not have reason to be affronted by that obscenity I found in the county courthouse, "Leave Seed Trees. It Is The Law"? What kind of law, what kind of lawmakers,



Virginia Division of Forestry Photo
Once coal has been located, machinery follows the seam around the contour of the mountain.

would force small landowners and farmers to leave a few seedlings on their woodlots when these exploiting strip miners are free to turn a mountain inside out and leave nothing but yellow clay and a mass of jumbled rock? Even more so, I have to wonder what kind of citizen would allow such lawmakers to retain office.

It has been clearly demonstrated that these lands need not be a total loss. Several experiments have shown that certain species of evergreen, especially the shortleaf pine, grow quite well on this soil. Since they are not native to the area, however, we cannot expect nature to do the job of reforestation for us. Seedlings are available through the Virginia Division of Forestry, and what a simple matter it is to set them out.

Reforestation of these stripped areas would prevent such massive erosion as has filled our streams. It would restore much of the natural splendor our hillsides once displayed. Even more so, it would stand as a living testimony to the future that we were intelligent. Christian people considerate of our fellow men.

It would be noble indeed if persons responsible for these stripped areas would carry out measures to ensure their future usefulness. This is not the case, however, and there is no indication that it soon will be. Consequently, we need laws, and there is no logical reason why we shouldn't already have them.

I have often considered the idea that if six months after a strip-mining operation has been completed sufficient steps have not been taken to restore the land to productivity it should be declared abandoned wasteland and automatically become the property of the state government. After a program of rehabilitation by the state, this land in a few years would be on its way to recovery and productivity.

Wouldn't such laws be as just as the one pertaining to the farmer and lumberman? Should government discriminate between these and the miner? Do future Virginians have the right to enjoy the beauty and splendor of nature?

Is not the study of nature the study of life? I have found that it is also the study of philosophy, but even more so the study of God.

Reforestation of stripped areas would prevent erosion, restore natural splendor of hillsides.

U.S. Forest Service-Photo





Wild Fur

By JIM McINTEER
Chief, Education Division

FUR!

Excitement and romance are embodied in that magic word. What visions of silent forest, rushing torrent and shining mountain it conjures up! What dreams it can evoke, and what deep racial memories it seems sometimes to stir!

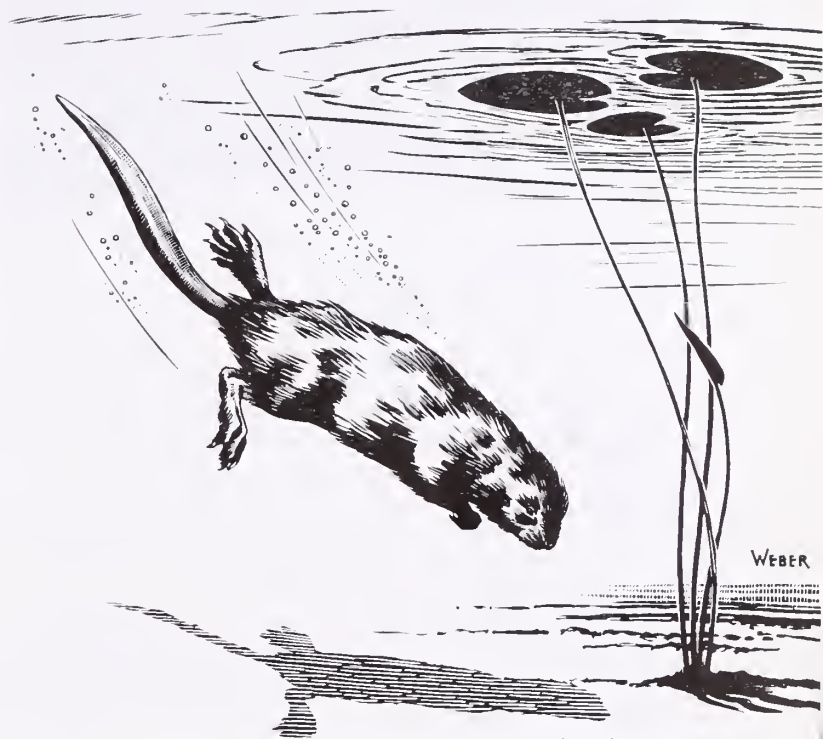
Symbol of natural bounty and riches from unspoiled wilderness, wild fur has made a deep impression on our American history and culture. Its attraction had more effect upon political, economic and social patterns, as civilization spread inland from our seacoast, than did the lure of gold. It was the solitary buckskin-clad trapper who penetrated the wilderness, and planted the seeds of the great civilization which followed.

The taking of wild fur is one of the oldest arts of man. Yet the techniques of the trapper have changed but little since the beginnings of recorded history. About the only significant innovation in nearly a thousand years was the steel trap, which came into wide use a hundred years ago. Leg-hold steel traps used today differ little from the early models. A more humane trap, which kills instantly with no suffering, has been developed recently and is being used now by many trappers.

But the real secret of the trapper's success today, just as it was with the early American Indian and white frontiersman, is his intimate knowledge of the ways of the animals he seeks to trap. The trapper must be a practical naturalist and keen observer. He must know the sort of places the furbearers like—where they live, where they travel, what they eat—and he must be able to recognize and read the "sign" they leave. Trapping fur is still a most primitive art. No

wonder it is one of the many outdoor activities that help modern man satisfy an elemental need to refresh himself by an occasional spiritual return to the natural, primitive world which was the ancestral home of his race. And it has an appeal for young and old alike. Many a youngster, while yet too small to "tote" a gun, has first felt the yearning to know more of the wild things of forest, stream, and marshland as he looked for sign of muskrats, possum, or even lowly skunk, along his first trapline around the home place.

Wild fur, like game, is a resource which in a suitable environment can produce an annual surplus that may be harvested as a crop without detriment to the resource itself. Too great a harvest, however, cuts into the brood stock and reduces it below the carrying capacity of the



Symbol of the natural bounty and riches of the unspoiled wilderness, wild fur is predominantly a product of wetlands. The most important furbearers seldom are found far from water. Muskrat leads the list.

habitat, thus depleting the resource. When this happens the fur catch declines, and valuable furbearers begin to disappear from portions of their range.

Fur is a product of wetlands, predominantly. Muskrats and beaver are semi-aquatic, and are never found far from water. Mink spend more time out of water, but seldom leave it far behind except to travel through the woods from one body of water to another. The mink's big cousin, the otter, is even less inclined to stray from pond or stream than is the mink. Raccoon, opossum and skunk are more widely distributed through the forests, yet even they

Raccoon, skunk, opossum follow the muskrat in number of furs marketed in Virginia each year.

Photos by Leonard Lee Rue

Commission photo by Kesteloo





Commission photo by Kesteloo



Virginia Chamber of Commerce photo by Flournoy

Beaver (left) once almost exterminated in Virginia, are reestablished in a number of areas. The playful otter (right) is rarely seen.

most often prowl the moist bottomlands.

In Virginia the muskrat is by far the most important furbearer. The number of pelts marketed in Virginia is well over a hundred thousand each year, and has been increasing steadily. The 1960-61 catch was almost double that of 1957-58. No other furbearer approaches the muskrat in number sold annually in the state.

Raccoon, skunk, opossum and mink follow the muskrat, in that order, in terms of number of furs marketed in Virginia. As with the muskrat, the annual catch of all four has increased steadily in recent years.

Of lesser importance, numerically, is the Virginia trade in fox, beaver and weasel furs. Only a few hundred pelts of each of these species are taken, but the crop has been increasing steadily except for the weasel catch which remains fairly static.

Less than a thousand licensed trappers participate in the fur harvest in Virginia each year, but many more Virginians trap on their own land where a license is not required.

If you should decide to go trapping this winter, remember that wild fur is both an economic and recreational re-

source and its taking is rather strictly regulated. Remember also that an *improperly* set trap may catch some animal other than the furbearer you want.

You must have a license to trap on any land other than that which you own, or on which you are a tenant.

You may not set steel traps except on land you own, or on which you are a tenant, without permission to do so from the landowner or his agent.

You must attach your name and address to any trap you set on another's land, and you must visit all your traps once each day to remove all animals you may have caught.

You may not set traps for muskrat on any stub, float or floating device on or in any of the waters of the state.

You may not possess or sell pelts or green furs in any county except during the open hunting or trapping season for the species concerned in that county and for a period of 15 days immediately thereafter.

If you want to trap, and are not *sure* you know just how to go about it, talk it over with your local game warden. It will keep you out of trouble if you listen to him, and he may come up with some helpful tips and suggestions on how and where to get your fur besides.

The tiny but ferocious weasel contributes little to the annual fur harvest.

Photo by Karl Maslowski



VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

RAINBOW "RUN" IN PHILPOTT. Over 100 rainbow trout weighing three to five pounds each were taken during a two-week period in late November as three-year-old experimentally stocked rainbow trout began an unprecedented spawning run in shoal areas of Philpott Reservoir, according to Game Commission Fish Biologist Bob Domrose. The big fish originated as fingerlings stocked experimentally in the reservoir in the fall of 1960 and 1961. The rapid growth is attributed to the abundance of threadfin shad in the lake upon which the fast-growing trout have apparently been gorging themselves.

When the reservoir first filled in 1952, the oxidation of organic material kept dissolved oxygen in the deeper colder portions of the lake at a level too low to support fish life. Surface waters with adequate oxygen were too warm for trout. Further investigations in subsequent years revealed an area near the dam where 48°-60° water contained adequate oxygen to depths of 110 feet. Fingerling rainbows were stocked in 1960 and 1961 which, through phenomenal growth, account for the lunkers now being caught.

The fish have been attempting to spawn on shoal areas near the dam but biologists point out that rainbows can only successfully spawn in streams. Anglers report that although large numbers of the big fish can be seen in the water, they are reluctant to strike lures and persistence is required to connect. Since the reservoir is not listed among designated trout waters, trout can be taken there without a trout license. Regular license requirements, season and limit restrictions apply, however.

Encouraged by these results, the Commission plans to stock additional fingerlings in Philpott this winter. If they fare as well as their predecessors, they should be lunker-size by 1965, but biologists are doubtful that the run will increase in size in future years.

PHELPS NAMED TO ADVISORY BOATING PANEL. Chester Phelps, Executive Director of the Commission of Game and Inland Fisheries, has been named to a second term as one of the 18 members of the Advisory Panel of State Officials to the Merchant Marine Council, according to Admiral E. J. Roland, Commandant, U. S. Coast Guard.

The most important task now before the panel is implementing Federal-State cooperation in the establishment of laws relating to pleasure boating safety. Merchant Marine Council policy changes and new regulations are, if applicable, referred to the Advisory Panel for advice, comment, criticism or recommendations.

HUNTER SAFETY TRAINING SHOWS BIG STRIDES IN FIRST YEAR. A lot of progress has been made in hunter safety training in Virginia since the Game Commission's Hunter Safety Training program was initiated a little over a year ago. During the first 12 months of the operation, 713 instructors were trained and 6,609 students were graduated from official courses. The training course, designed in cooperation with the National Rifle Association and modeled after their nationwide training system, provides for standardized instruction for each student followed by a written examination. Only those students who have had the proper coursework and made satisfactory test scores are given the Safe Hunter certification and diploma.

All Virginia game wardens have been trained as Hunter Safety Instructors and they in turn are training additional instructors in their local areas. The majority of the students graduated to date have been in the younger age groups where the highest accident rate exists.



ARCHERY AT HOG ISLAND

Text and Photos by LEON G. KESTELOO
Audio-Visual Supervisor

Since Hog Island was purchased by the Commission of Game and Inland Fisheries in

Modern day hunters draw their bows where once the Indian drew his.

(Below) At Hog Island there is always plenty of time to stop and discuss equipment and archery techniques. While the techniques are similar to those of yore, modern archery equipment is a far cry from that of yesteryear.



1951, it has been maintained as a state waterfowl refuge. In addition to providing a protected feeding and resting area for thousands of wintering ducks and geese on the James River and improving the waterfowl hunting in the area, its 2,100 acres of woodland, cropland and marsh support what probably is Virginia's greatest concentration of deer.

Each fall since 1954 bowhunters alone have enjoyed an opportunity to try to harvest some of the surplus deer on the refuge. Hunting with firearms on Hog Island would not be compatible with the primary function of providing a waterfowl refuge.

Richard Akins of Petersburg got a four-point buck on opening day.

Modern arrow heads compared with one of the Indians'.





Archers arrive early for the Hog Island hunt, and make themselves comfortable in camp. Equipment brought for camps is plentiful and varied.

The 1962 Hog Island hunt was held during the regular archery season on deer of either sex, October 15-November 1. As usual, archers came from near and far, made their camps, swapped yarns, took some target practice, had a grand time, and managed to bring in 21 deer.

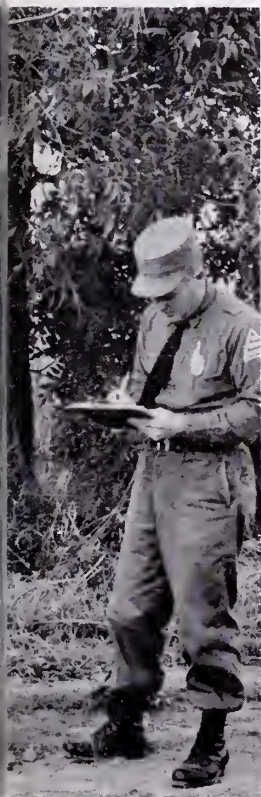
The practice of the ancient sport of archery seems especially fitting in this historic area. Located on the Surry County side of the James and east of Jamestown Island, Hog Island must have been a favored hunting ground of the Indians met by Virginia's first settlers. The island reportedly got its name when Jamestown settlers began keeping hogs there in 1608.

Bowhunting has been one of the fastest growing outdoor sports during the past 20

years. Some have turned to it out of an urge for simple things in a day when life seems to get more and more complex. Others declare that it is the most difficult and therefore the most manly and sporting way to hunt. It certainly takes skill to stalk within bow range of game as wary and alert as a deer, and it takes skill to bag that game with an arrow once the successful stalk has been made.

Probably the best explanation for the popularity of bowhunting is that it is a high quality sport that is just plain fun!

Hunting techniques varied. All hands were checked by wardens.



Some hunters managed to shoot deer.

Below: A stand favored by the ladies near the old barn.



BUCKS AND ANTLERS

By MALCOLM A. BOOKER
*Game Warden
Buckingham County*

EVERY year during deer season we hear the same argument as to whether the buck loses his antlers every year.

Deer season is open now, as I write here in Buckingham County. Around checking stations and other places where hunters gather, you would be surprised at the number of both young and old who flatly refuse to believe that the buck loses his antlers every year after he is 18 months old.

Nature has already set the stage for each buck to lose his antlers some time between the last of January and first part of March. No matter how many points he has now, if he gets away from the hunter he is going to lose them before spring.

In a crude way I am going to attempt to explain the cycle of the antler.

The mating season comes but once a year, usually in October, here in Virginia. Most old deer hunters know that at this time the buck does a lot of fighting for possession of the doe. The winner of these fights is called on by nature to do a long and exhausting biological service.

Nature has equipped the buck physically to perform this task, but when this service has been performed his organs and glands do not become inactive and remain dormant for another year. Here is the key to the cycle.

Nature has created a safety valve, which permits the buck's highly developed and vigorous glandular system to continue to function, but directs its secretions to a different and useful purpose. This safety valve is the buck's antlers!

A few weeks from now the old buck may be running across a field or through a thicket when his antlers fall off, but they will drop no matter if he is standing still.

Sometimes I picture the beginning of the new antler as an English pea in the spring, breaking through the crust of earth; and as this action takes place under the base of the old antler, this old antler is pushed off by the new antler starting to mushroom upward. After the buck has shed his old antlers, the new set grows very fast. By early summer they look almost like some kind of cactus plant. They are spongy, filled with blood vessels, and covered with fine brown hair.

If you visit our state game farm in Cumberland County during June or July and they happen to have a buck in captivity, you can see for yourself what a growing antler looks like. I saw a buck there last year with antlers full grown but still very sensitive to touch. There was even a bit of blood on one antler, caused by a mere briar scratch.

During this period the buck tries to be very careful not to let anything strike his antlers. Sometimes he does hit one of them against some hard object and fractures it. You may have found evidence of such a mishap in the fall if you

saw a deer with an enlarged ring around one of the longer points on an antler.

By late summer the buck's antlers will reach full size. The size of antlers and the number of points on next year's buck will be determined largely by the quality of food he eats and by the vigor and virility of the animal himself.

This is true in all types of deer which we have in the United States: the Virginia whitetail, the black-tailed deer and the mule deer.

Along about next September a strange thing will take place in the buck deer. A constriction will develop at the base of the antler. This will cut off most of the circulation to the antler and the antler will begin to dry up and harden. The antlers shrink and wrinkle, the fine coat of hair loosens up, and the old buck will begin to rub his antlers against small trees until he has polished them to look like metal.

During the shrinking period the little points that you find around the lower part of the antler, points that you can hang a ring on, are formed. By the last of September or first of October antler development is complete and the buck's sexual energy and vigor is ready to be diverted again to reproductive purposes.

You will notice that the buck takes on a different appearance then. His neck will swell out to about two inches wider and thicker and he will become belligerent. He has again come into his own, ready to venture forth in search of the lady of his choice.

When the buck finds his mate, he stays with her a day or two then he deserts her and seeks a new mate. This is the time that the buck fights for possession of the doe. I have seen bucks locked together by their antlers and found dead.

We are now back to breeding season again, and the cycle of the antlers is complete. The cycle will repeat itself over again in the next 12 months.

Here are a few other facts about deer.

The fawn that was born last spring lost his spots this fall, and if killed this season he will have only a button. By next fall he will be 18 months old and will have a spike. This is the age at which the buck starts to shed every year. He will reach full maturity between six and seven years of age and after he is 10 to 11 years old, his antlers will become misshapen and ugly.

The deer has been hunted for food longer than almost any other game animal on this planet. His discarded antlers have been used for many things down through the ages, such as a flocking tool for making arrow points, various other tools by early man, and even by our Indians to hang scalps on.

A book could be written on the habits of deer, the food they eat, where they get their salt, how they grow larger where the winters are longer, but I only wanted to explain what happens to the buck's antlers. Now if the old buck watches his calories and dodges the hunters and automobiles, by the time he reaches seven or eight years of age he may have a large rack on his head with 26 points like one killed in Buckingham last year.

If you are still a doubting Thomas as to whether the buck really sheds his antlers, have the deer season set up about eight weeks, to begin late in January and go out in March, and nature will show all you deer hunters and trophy seekers a herd of bald-headed bucks.

Game Bird Identification (Migratory Species)

By DOROTHY E. ALLEN
Education Officer

OUR objectives are:

1. To know waterfowl by their activities as well as their looks.
2. To note the routes waterfowl take to get to and from Virginia.
3. To find out the different characteristics of surface-feeding and diving ducks.

There are two classes of ducks: the surface-feeders and the divers.

Surface-feeders, called pond ducks, river ducks, puddle ducks, dabblers and tip-up ducks, in Virginia include such species as the baldpate, black duck, blue-winged teal, gadwall, mallard, pintail, and wood duck.

When taking off from the water, surface-feeding ducks

leap straight up into the air and get under way by sheer wing power.

Divers, called sea or bay ducks and deep-water ducks in Virginia, include: buffle-head, canvasback, goldeneye, red-head, ringneck, and scaup.

The divers patter along on the surface of the water for some distance to get up flying speed before they launch themselves into the air.

Other general characteristics distinguishing puddle or dabbling ducks from diving ducks are shown in the illustration.

The next step in identifying a species is to note shapes, patterns and markings. See the chart on the next page.

The best way to know your ducks is to observe them. Some

Attention: Teacher

For around 200 years birds have been marked in order to study their migratory movements. However, it was not until the end of the 19th century that systematic banding received serious attention. Since 1920 this project has expanded and the total number of birds banded is nearly six million. In the United States the banding of ducks and geese is confined to refuge areas, chiefly those under the supervision of the U. S. Fish and Wildlife Service. Through banding birds biologists have been able to determine migration routes that make up four major flyways in North America. Reporting the details and sending in bands from birds are responsibilities of all citizens.

Migratory birds follow certain definite routes on their journeys to and from breeding and winter quarters. This study will deal with the Atlantic Flyway and the more common waterfowl of Virginia. The Atlantic Flyway has at least three primary migration routes. The eastern route, which leads directly down the coast, is used by the greater snow geese and the American brant which follow the coast line to winter quarters in the bays and sounds of Virginia and North Carolina. Most of the black ducks of the south and middle Atlantic coast, and practically all the Canada geese, come from interior points making a cross-country flight over Pennsylvania and northern West Virginia to the Atlantic coast in the vicinity of Chesapeake and Delaware Bays. This is also the general course taken by the diving ducks. Practically every canvasback, redhead and scaup that is seen in winter in Chesapeake Bay and Back Bay has pursued this route.

One of the most remarkable migration routes of all North American waterfowl is taken by the redheads. From Bear River Marshes of Great Salt Lake, Utah, they fly east through the Dakotas, Minnesota, and Wisconsin, Pennsylvania and West Virginia to the coast of Maryland and Virginia.

Another tributary route to the Atlantic flyway is really a branch of the Mississippi flyway that apparently takes off in the vicinity of St. Louis, Missouri, and reaches the eastern coast. This route is followed by blue-winged teal, and probably by some gadwalls, shovellers and possibly by some ringnecks.

As you can see, the Atlantic flyway is a complicated system of migration routes.



Migratory waterfowl come to Virginia by way of the Atlantic Flyway, which is a complex system of migration routes.

COMMON VIRGINIA DUCKS

PUDDLE DUCKS

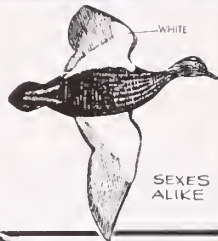
Frequent shallow marshes, ponds, creeks, and rivers; often feed in corn and grain fields.

FIELD MARKS

BLACK DUCK

(Black Mallard; Blackie; Dusky Duck)

Large sized: 2-4 lbs.
Brown head; black body and white underwing.



MALLARD

(Greenhead; Wild Duck)

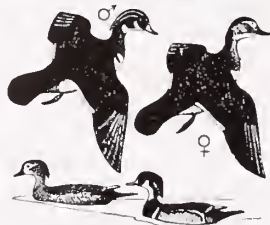
Large sized: 2-4 lbs.
Drake: Green head with white ring around neck; brown breast; gray-white body.
Hen: Brown.



WOOD DUCK

(Summer Duck; Acorn Duck; Tree Duck)

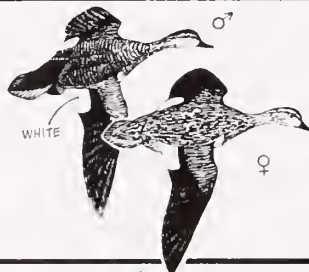
Medium sized: $\frac{3}{4}$ -1 $\frac{3}{4}$ lbs.
Drake: Gaudy — white breast and belly and throat; chestnut sides; dark tail.
Hen: Dark brown.
Both: Elongated crest (never raised).



GADWALL

(Gray Duck; Creek Duck; Shuttlecock)

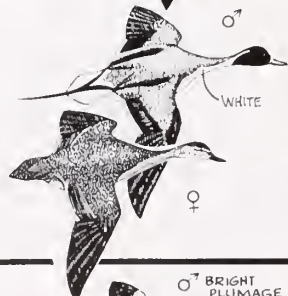
Medium sized: 1 $\frac{1}{4}$ -2 $\frac{1}{2}$ lbs.
Drake: Gray body; black rump; white belly.
Hen: Brown.
Both: White speculum.



PINTAIL

(Sprig; Longneck; Pheasant-Duck)

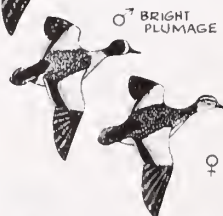
Medium sized: 1 $\frac{1}{2}$ -2 $\frac{1}{4}$ lbs.
Drake: Brown head; gray body; black rump; white belly.
Hen: Brown.
Both: Long, slender necks and pointed tails.



BLUE-WINGED TEAL

(Blue-wing)

Size of pigeon.
Drake: Black head; white crescent; gray-brown body.
Hen: Brown.
Both: Striking blue patch on wings.



BALDPATE

(Baldy; Widgeon; Diamond Duck)

Small sized: 1 $\frac{1}{4}$ -2 $\frac{1}{2}$ lbs.
Drake: White crown; oval shaped patch on forehead; lower breast and belly white.
Hen: Gray head and neck; brownish body; white undertail.
Both: White wing patches.



DIVING DUCKS

Frequent open water in bays, lakes, wide rivers, or the ocean; seldom come ashore.

FIELD MARKS

GOLDENEYE

(Whistler; Whistler-wing; Brasseye)

Medium sized: 1 $\frac{1}{2}$ -2 $\frac{3}{4}$ lbs.
Drake: Black and white body with white cheek.
Hen: Brown head; gray body.



REDHEAD

(Fiddler Redneck)

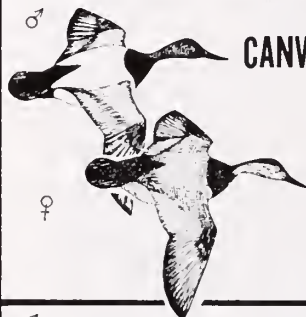
Large sized: 1 $\frac{1}{2}$ -3 $\frac{1}{4}$ lbs.
Drake: Red head; black breast and rump; gray body.
Hen: Brown; gray wings.
Both: Large buffy head.



CANVASBACK

(Can; Horse-duck; Whiteback)

Very large: 2-3 $\frac{1}{2}$ lbs.
Drake: Red head; black breast and rump; white body.
Hen: Grayish.
Both: Low-brow wedged shape.



BUFFLEHEAD

(Spirit Duck; Dipper; Hell-diver)

Very small: $\frac{3}{4}$ -1 $\frac{1}{4}$ lbs.
Drake: Black and white; white saddle-like patch on black head.
Hen: Dark gray and white; white cheek patch.



RINGNECK

(Ringbill; Raft Duck; Buckeye)

Medium sized: 1 $\frac{1}{4}$ -2 lbs.
Drake: Black, gray and white.
Hen: Brown; gray wings; white around face.
Both: White rings on bills.



SCAUP

(Bluebill; Broad-bill; Fall Duck)

Medium sized: 1 $\frac{1}{4}$ -2 $\frac{1}{4}$ lbs.
Drake: "Black on each end—white in middle."
Hen: Brown.
Both: Blue bills.



ducks look a lot alike, such as the redhead and canvasback or the ringneck and the scaup. By studying the activities of these "hard to tell by looks" ducks you will find they have certain individual peculiarities which make it easier to identify them. This will be the third step of this identification of waterfowl study.

Divers

RINGNECK DUCK AND SCAUP—The most distinguishing difference between these two species lies in their flight. Ring-necks fly mostly in small flocks of a half dozen, or in mated pairs, in open formation rather than in close bunches or lines.

REDHEADS AND CANVASBACKS—Both fly in rough V-shaped or wedge formations. When either species comes to a feeding ground the flock may pass and repass over the site several times before gradually descending by sailing up to the chosen spot and dropping in the midst of other ducks with many splashing, or suddenly dropping from out of the sky with a zigzag course as if one wing were broken. The redhead in flight appears heavy-looking and its head is large and puffy. The neck also appears short compared with the canvasback, which flies with its long slender head and neck outstretched.

Canvasbacks sit lower in the water than do redheads, and on water are distinguished from redheads by the extreme whiteness of their backs and their wedged shaped head.

BUFFLEHEAD—These rather silent birds plunge quickly beneath the surface and burst out again in full flight, disappearing in the distance with a blur of whirring wings.

GOLDENEYE—The goldeneye's penetrating whistle of wings makes identification easy. They are never seen in large flocks. Small parties will swoop and swerve, a female generally in the lead. When rising from water they circle several times to gain height and seldom travel close to water.

Puddle Ducks

BALDPATE—Sitting buoyantly on the water with chest low and tail well elevated, they pivot frequently as they feed and appear ever on the alert. They are known as "hijackers." When canvasbacks, redheads and coots dive and come up with pondweed trailing from their bills, the baldpates become poachers and grabs as much as possible.

BLACK DUCK—The black duck is one of Virginia's most common ducks and one of the most important species on the Atlantic coast. This wildest of all ducks has a relatively

slow, direct flight usually high in the air.

BLUE-WINGED TEAL—These ducks fly in large, compact flocks, twisting and turning and wheeling in unison. Blue-winged teal are very sensitive to the approach of autumn and are among the earliest ducks to migrate.

GADWALL—Because of worldwide distribution this duck can be referred to as one of the most cosmopolitan of ducks. This surface-feeding duck can and does dive for its food when necessary.

MALLARD—Domesticated in many parts of the world, the mallard with its green head is one of the most widely known of ducks. Its flight is not particularly rapid, but it has the greatest migration speed of all waterfowl. Records show banded mallards have flown 1,000 miles in five days.

PINTAIL—Built on graceful, clipper lines the pintail is well fitted to cleave the air and change course at lightning speed. Surpassed by few, if any, of the ducks, they are rightfully referred to as greyhounds of the airways.

WOOD DUCK—You will have no trouble identifying the male wood duck, for his gaudy plumage makes him a Beau Brummel among birds. No duck is so expert as the wood duck in threading its way through the interlacing branches of the forest.

Suggested Activities

1. Visit a waterfowl refuge and see how many birds you can identify by their activities as well as by the way they look. Watch to see which birds will stand on their heads (tip up) in the water to eat and which birds dive completely under water to eat. Watch to see which ones have to run on the water to take off.
2. On a map of the eastern United States show the migration routes of waterfowl that visit Virginia.
3. Let each student of the class tell the important markings or activities of a duck and see if classmates can identify it.

Some Reference Materials

"Descriptions and Life Histories of Virginia's Game Birds," VIRGINIA WILDLIFE, XXI (May, 1960). Reprint C-2.

"Virginia Game Birds," "Virginia Birds of Prey," "Virginia Winter Birds," "Virginia Summer Birds," Commission of Game and In-land Fisheries. Set of 4 20x30-inch full-color charts. \$2 per set.

Virginia Waterfowl Identification Guide. The Atlantic Waterfowl Council, Rev. 1962, (56-pg. booklet)

These 16-mm motion pictures are available from the game commission: Behind the Flyways (color, 30 minutes). Know Your Ducks (color, 14 min.), Waterfowl in Slow Motion (color, 12 min.), Wood Duck Ways (color, 20 min.).

NEXT MONTH: Study 2-D—Waterfowl Identification (Swans, Geese, Mergansers)

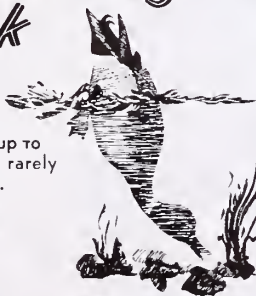
Characteristics of...

Puddle or Dabbling Duck



Generally has metallic speculum; usually swims with tail held clear of water.

Tips up to feed; rarely dives.



Legs placed near center of body.



Hind toe not lobed; foot smaller than in diving ducks.



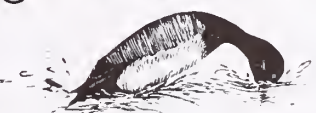
Springs into air on take-off.



Diving Duck



Usually swims with tail held close to water.

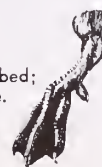


Dives completely under water to secure feed.

Legs set near rear of body.



Hind toe lobed; foot large.



On take-off patters along surface for some distance.



*Bird
of the
Month:*

The Downy Woodpecker

By DR. J. J. MURRAY
Lexington, Virginia

PERHAPS, as we begin the fifth year of these Bird-of-the-Month articles, the time has come to acknowledge our indebtedness to that "bible" of all bird students, Dr. Frank M. Chapman's *Handbook of Birds of Eastern North America*. Along with the Peterson "Guides," it is an indispensable tool in bird work. Dr. Chapman undoubtedly did more to stimulate the field study of birds than any other man in the United States. Those of us who were privileged to know him admired his gracious personality; all who love birds recognize the helpfulness of his work.

The downy is the smallest of our Virginia woodpeckers and, with the possible exception of the flicker, the most familiar. It is a poor and treeless yard, even in the heart of a city, that does not sometimes afford one.

A little more than six inches in length, the bird's upperparts are black, spotted with white. The underparts are dull white in the southern race, clearer white in the northern or high mountain birds. In the tail the middle feathers are black, the outer ones white, barred with black. The male has a red band on the back of his head. Its close relative, the hairy woodpecker, has almost exactly the same pattern, lacking the black bars on the tail feathers, but it is half again larger.

When you watch a woodpecker hammering away at a stub you wonder why the bird does not go mad with a migraine headache. Not at all! The little downy just loves to batter with its head, whether it is beating out a tattoo roll to attract a mate, or digging out a home for her in a dead branch. Nature has prepared him for this queer carpentry with a built-in shock absorber. On each side of the head a tendon, coiled like the mainspring of a watch and stretching from the base of the bill around the side of the skull, takes up much of the force of the blows.

This powerful bill is the bird's chief tool. It is used to dig out the delicious grubs from the wood. In courtship its drumming takes the place of the love songs of other birds. It serves as a chisel to form a deep nesting hole where at the culmination of that courtship the female may lay her eggs.

The downy has a specialized tail too. The ends of the tail feathers are stiff, to serve as braces as the bird clings to the side of a tree. To help still further with this clinging, all woodpeckers, except one small group, have an unusual toe arrangement, two in front and two behind, instead of the common three and one arrangement.

Four or five, or even six, eggs are laid. As is the case with all woodpeckers, they are white. The color pattern, common in the eggs of most birds, is helpful in camouflaging the eggs in open nests. This is not needed in the dark nest hole of the woodpecker. On the other hand, the opposite is there useful, for the white is visually helpful in the darkness.

Here in this dark and often ill-smelling hole the young, ugly offspring of the attractive parents, are hatched; and here they live until as well-fledged youngsters they are ready to launch themselves into an unknown world.



Edited by DOROTHY ALLEN

OBSERVANCES OF NATURAL RESOURCES CONSERVATION WEEK

Blair Junior High

Blair Junior High School, Norfolk, observed Natural Resources Conservation Week with a leaking faucet. Miss Rosa Lee Sullivan, 7th and 8th grade general science teacher, submitted the following article on their activity:



Tommy Guffey and Bonnie Patterson count drops of water in a leaking faucet demonstration at Blair Junior High, Norfolk.

Why so much talk about a leaking faucet? Most of us have them around the house, at one time or another.

Did you know that if you allow this leak to continue, you are wasting one of our most precious natural resources—water? That is one reason Natural Resources Conservation Week has been set aside by Governor Harrison—to call to our attention that we must conserve our forests, soil, water, wildlife and minerals.

Here at Blair we observed Conservation Week by setting up displays, making posters, and showing films on all phases of conservation, such as: Conserving Our Soils Today, Conserving Our Forests Today, and How Water Helps Us.

A colorful display was set up in a cabinet in the main hallway of our school. The most interesting feature was a water cooler and a battery jar. The cooler was decorated to look like a water tank. It was filled with water. The spigot was slightly opened and a slow drip of water was allowed to flow throughout

the day into the jar.

A contest was centered around this feature . . . the leaking faucet. A prize was offered to the pupil who could guess how many drops of water were lost during a school day, from 9 a. m. to 3 p. m. Pupils were asked to put their answer on a slip of paper with their name and homeroom number. A box decorated and labeled "Leaking Faucet" was placed on the wall near the display.

Much interest was created and a beehive of activity centered around the display cabinet. At the end of the day over 75 pupils had taken a guess. The winner, Bob Stone, guessed 30,000 drops of water. The approximate number of drops estimated before was 32,400.

Remember, a regular faucet leak at home would waste 60 gallons of water a day.

Sedley SCA

The Sedley Student Cooperative Association based their program on natural resources during Conservation Week—October 11-20. Mrs. Lucye Bailey, teacher, presented a quiz on "The Conservation of Our Natural Resource" to eight of her pupils. Questions and answers concerned conservation of soil, forests, water and wildlife. Pupils taking part were Rebecca Hotchkiss, Judy Burgess, Rita Jean Tillery, Nancy Henson, Mary Jane Hayner, Anita Turner, Roy Bryant and Jerry Halsey.



Members of Sedley Elementary School SCA take part in a quiz on conservation of natural resources, conducted by Mrs. Lucye Bailey.

Conservation Stressed: They Spell it With A Big 'C'

Students at one Spotsylvania school have added a "C" to the classic "Three R's" and are having a lot of fun being educated in conservation. At Berkeley Elementary School two teachers moved a lot of the outdoors indoors and erected a feeder near a classroom window for birdwatching.

Mrs. A. Miller Arritt, language teacher, and Miss Anita Cronch, science teacher, have coordinated efforts in interesting their students in the 5th, 6th and 7th grades.

"We have living animals, growing plants and charts that show nature's balance of water, soil, wildlife and plant life," Mrs. Arritt explained.

The State Department of Education feels right keenly about the youth of Virginia learning well the lessons of conservation of the Old Dominion's natural resources. Teacher scholarships have been established and each summer the educational leaders are offered the opportunity to attend a special workshop at the College of William & Mary, Virginia Tech, or Virginia State College. Mrs. Arritt attended the one this summer at William & Mary.

Game Warden Francis Boggs lauded the school for its efforts and the teachers for capturing the youngsters' interest through visual stimulants added to other teaching aids.

—Harriet Allen
Free Lance Star

Definition

The definition of Conservation as it is given in the dictionary is the preservation of our natural resources—those being: soil, mineral, forests, water and wildlife.

A down-to-earth way of describing these broad subjects was given by a little girl who wrote "Conservation is the food we eat, the clothes we wear and if you don't we won't."

Esther Macatee, Garden Club of Warren County

The Garden Club of Virginia Journal, November-December, 1962

the DRUMMING LOG

Edited by HARRY GILLAM

State Whitetail Contest Winners

A 17-point Albemarle County buck taken by Paul L. Huffman of Weyers Cave, Virginia, took top honors in Class I competition during the Virginia Big Game Trophy Contest in Harrisonburg. This head previously won the Eastern competition at Hampton. Western Class I competition at Harrisonburg was won by a head submitted by Hayden Lewis of Covington.

Western Regional competition was sponsored by the Harrisonburg-Rockingham County Izaak Walton League. The Eastern Regional contest was sponsored by the Virginia Peninsula Sportsmen's Association. The Commission of Game and Inland Fisheries provided prizes and certificates for winners in the state competition.



Big Stafford County Buck

A 13 point buck with a 24" spread taken by Charles H. Price of Stafford during the 1961-62 season. It is apparently one of the largest ever taken in this area.



The top whitetail head taken in Virginia during the 1961-62 season (center) is scrutinized by Lester Hoover of Harrisonburg, national director of the Izaak Walton League of America and one of the strong supporters of the Big Game Trophy Contest. The winning trophy was taken in Albemarle County by Paul L. Huffman of Weyers Cave, Va. The head on the right is a former winner, belonging to Lloyd Lam, which scored the highest (252-10/16 points) of any deer ever entered in the contest. The head on the left is second place Class I winner from the Eastern Division, which was killed in Rappahannock County. The horns are from a Stafford County buck one of the strong supporters of the Big Game Trophy Contest. The winning trophy was taken in

National Forestry Honorary Fraternity Chapter Installed At Virginia Polytechnic Institute



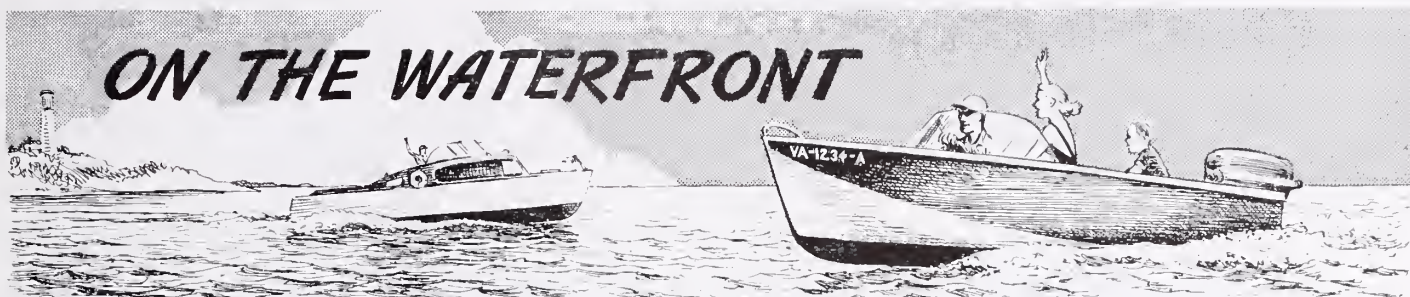
Dr. Kenneth Carvell (extreme right), president of the national forestry honorary fraternity and Associate Professor of Forestry at the University of West Virginia, is shown handing the Charter of the newest chapter of Xi Sigma Pi to Thomas C. Fravel, Woodstock, Virginia, president of the V. P. I. group. Others in the picture (left to right) are Professor Emmett Thompson, faculty advisor, V. P. I.; David Van Lear, Clifton Forge, Virginia, secretary-treasurer; and William E. Clark, Meadowview, Virginia, vice president. The Chapter was installed October 27.

Sport Fishery Research Foundation Formed

A Sport Fishery Research Foundation has recently been formed as a non-profit corporation to receive and disburse funds for fishery research. The new organization, headed by Arthur R. Benson of East Berlin, Connecticut, will have a function similar to that of the Wildlife Management Institute in allotting funds to Cooperative Fishery Research Units now being established at selected universities throughout the country.

The immediate goal of the Foundation will be to finance through contributions a series of graduate fellowships in fishery research to stimulate the training of workers in this field. It is hoped that, through accelerated fishery research, new techniques can be developed so that our fishing waters will be able to meet the tremendous demand expected in the next few years.

Richard H. Stroud, Executive Vice-President of the Sport Fishing Institute, and his assistant, Robert M. Jenkins, both of Springfield, Virginia, are trustees for the new organization.



ON THE WATERFRONT

Edited by JIM KERRICK

Boating Accidents Up First Six Months 1962

Pleasure boaters continue to bump each other off. The United States Coast Guard reports 67 boating accidents which resulted in 9 injuries, 11 deaths and \$67,000 worth of property lost or damaged for the period January 1 through June 30, 1962, in the state of Virginia. It is not the young boating enthusiast who is causing the majority of the boating accidents. Most of the accidents are caused by operators who are between 26 and 50 years of age and have in excess of 500 hours' boating experience.

Class 1 (16 to less than 26 feet, open construction) boats are involved in more accidents than other types of boats, and 34 of the 67 accidents occurred while the boat was tied up to the dock. These accidents were caused while refueling, by the boat being overloaded or weight not dispersed properly within the boat, and by occupants jumping or stepping into the boat while the boat was not properly moored. A classic example of overloading is the tragic accident that occurred in Florida where 16 lost their lives because they all tried to ride in a 14-foot boat.

Nineteen of the 67 accidents in Virginia during the first half of last year occurred while the boats were cruising. Excessive speed, not posting a proper lookout, making sharp turns at excessive speed, improper lighting or no lights of any kind at night, not paying attention to weather conditions, and failure to have the proper safety equipment on board are the usual causes of accidents involving boats under way.

Each boat owner who is not familiar with the rules of the road and does not know the fundamentals of safe boating should take a course in safe boating from one of the power squadron or Coast Guard Auxiliary units. These classes are given free of charge to the boating public and are conducted by well qualified instructors who stand by at all times to assist in any way that they can.

Lessons From Casualties— Vignettes Of Death

Playing Both Ends Against the Middle

Six persons set out on a river voyage in a 15-foot outboard boat. The boat was overloaded. No life jackets were on board. One wave entered the boat over the bow. People and water rushed to the rear of the boat, arriving in time to take more water over the stern. The boat promptly sank. Four persons drowned.

"Thar She Blows—"

The port gasoline fuel tank had a deteriorated vent pipe, permitting vapor and overflow to drain into the bilge. When the tank was "topped off" for the "last time," the resulting explosion blew the boat's two occupants overboard; one died by drowning and the other died from injuries received from the explosion.

A Livin' "Bomb"

A 14-foot boat propelled by an 80-horsepower outboard motor was proceeding at full speed. Driver's vision was "obscured" by two passengers sitting on bow of boat with their backs resting against the operator's windscreen. The boat struck a buoy and the two passengers were ejected into the water. One died from loss of blood when slashed by the propeller of the 80-horsepower "bomb."



That boat is Harold's only hobby.

One Wrong Turn Deserved Something Better

This casualty was alone in his 14-foot outboard boat, operating at high speed, with his son in tow on waterskis behind. Said casualty made a sharp turn which promptly threw him overboard; the driverless boat came around in a vicious circle, narrowly missing the son and striking the victim who then sank beneath the surface of the water. As he was not wearing a life jacket, he promptly became a statistic, the victim of his own carelessness and lack of common sense.

One Went Out—None Came Back

A one-armed man who could not swim and who never wore a life jacket went to sea in a very small boat in very rough weather. Obviously he never returned from that trip.

A Costly Engagement

Outboard boat motor stopped while boat was in midstream. Operator cranked motor over with clutch engaged and throttle wide open. Boat promptly reared up on its stern, flooded and swamped. Operator, who had no life jacket, is now deceased.

Practice What You Preach

A 14-foot outboard went over a dam and threw its occupants, a young man, his wife, and their three children, into the swirling river waters below. The young man was not wearing a life jacket; he drowned. The three children were wearing life vests and all were safely rescued—two of them after being swept downstream for 30 minutes! In effecting the rescue one of the boats of the local police department's River Rescue Service overturned and a young officer drowned; he was not wearing a life jacket either!

Old Enough To Know Better

On a nice sunny June day an elderly gentleman who could not swim, and who suffered from dizzy spells, took a boat ride with friends. He apparently became dizzy, fell overboard from the outboard boat and drowned. He was not wearing a life jacket.

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES PERSONNEL

MEMBERS OF THE COMMISSION

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(Accomack, Charles City, Essex, Gloucester, James City, King and Queen, Mathews, Middlesex, New Kent, Northampton, Princess Anne and York counties; Hampton, Newport News, Virginia Beach, and Williamsburg cities)

J. Cargill Johnson

17 Douglas Drive, Newport News

Lyric 5-0920 (R)

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(Norfolk County; Norfolk, South Norfolk and Portsmouth cities)

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P. O. Box 665, Norfolk

Madison 2-2531 (R); 622-4361 (B)

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Diamond 5-8323 (B); Diamond 3-6266 (R)

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A. Ree Ellis

P. O. Box 454, Waynesboro

Whitehall 2-3623 (R); Whitehall 3-8206 (B)

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Raymond R. Guest

King George—Spruce 5-3171 (R)

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(Bland, Buchanan, Dickenson, Giles, Lee, Pulaski, Russell, Scott, Smyth, Tazewell, Washington, and Wise counties; Bristol, and Norton cities)

Ralph G. Gunter

Abingdon—Market 8-2234

TENTH CONGRESSIONAL DISTRICT

(Arlington and Fairfax counties; Alexandria and Falls Church cities)

H. G. Bauserman, Sr.

4211 16th St., South Arlington

671-6620 (R); Jackson 4-0900 (B)

RICHMOND OFFICE PERSONNEL

Location: 7 North Second Street, downtown Richmond
Mailing Address: P. O. Box 1642, Richmond 13, Virginia
Telephone: 644-4111, extension 2261
Hours: 8:15 a.m.-5:00 p.m., Monday through Friday

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| Katherine J. Williamsan | Secretary |
| Norma G. Adams | Personnel Secretary |
| Boyce Madden | Receptionist |
| Alice Green | Maid |
| George R. Holladay | Engineer |

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| Barbara Jean Jahnsan | Secretary |
| Kathleen Lancaster | Clerk-Typist |
| Audrey Waalard | Clerk-Typist |
| Florence B. Wade | Boat Registration Supervisor |
| Violet Hardy | Clerk-Typist |

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| Kathryne B. Prestan | Clerk-Typist |
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| Clarence R. Lunsford | Clerk-Messenger |

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| Morian Waading | Secretary |

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| Robert G. Martin | Chief |
| Frances Grant | Secretary |

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| |
|---|
| Stuart O. Newman, Coordinator, Field Educational Services |
| Baskerville |

LAW ENFORCEMENT DIVISION

| |
|---|
| R. S. Purks, Assistant Chief |
| Drawer 845, Fredericksburg—Essex 3-9326 |

HAMPTON ROADS DISTRICT

| |
|--|
| Roland O. Halstead, Game Warden Supervisor |
| Creeds—Princess Anne 426-2961 or 426-2962 |

District Wardens

| |
|---|
| W. E. Lankford, P. O. Box 71, Franklin—Lagan 2-3466 |
| J. B. Nicholson, Jr., P. O. Box 65, Wakefield—3501 |
| Gorland C. Fentress (Game Patrol Pilot), Rt. 1, Box 397, Princess Anne—426-3315 |

GEORGE WASHINGTON DISTRICT

| |
|------------------------------------|
| Fred Brawn, Game Warden Supervisor |
| Rt. 4, Box 546, Fairfax—273-7842 |

PATRICK HENRY DISTRICT

| |
|--|
| I. H. Vassar, Game Warden Supervisor |
| Charlotte Court House—Kingswaad 2-2184 |

District Warden

| |
|---|
| C. P. Mantgomery, Rt. 2, Pawhatan—SY 4-2671 |
| (Thru Midlothian) |

THOMAS JEFFERSON DISTRICT

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|---------------------------------------|
| V. J. Whitmer, Game Warden Supervisor |
| Linville—Edam 833-2919 |

J. E. B. STUART DISTRICT

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|---------------------------------------|
| J. W. Francis, Game Warden Supervisor |
| P. O. Box 229, Stuart—Owen 4-3446 |

DANIEL BOONE DISTRICT

| |
|-------------------------------------|
| Ben L. Bird, Game Warden Supervisor |
| Bland—MU 8-3536 |

District Warden

| |
|--|
| Ted Ward, Pilgrim Knab—Dwight 259-2601 |
|--|

LOCAL GAME WARDENS

| WORK AREA (County) | NAME, ADDRESS AND TELEPHONE |
|-----------------------|---|
| Accomack | E. C. Crapper, Keller—Sunset 7-3368 |
| Albemarle | J. G. Jahnsan, Rt. 3, Charlottesville—293-1486 |
| | C. R. Walker, Rt. 1, Charlottesville—3-6243 |
| Alleghany | F. W. Hanks, Box 581, Cavingtan—962-5751 |
| Amelia | J. E. Allen, Box 833, Amelia—144 F 11 |
| Amherst | R. B. Chenault, R.F.D. 1, Amherst—Allwaad WA 2-6333 |
| Appamattox | C. D. Tarrence, R.F.D. 2, Appamattox—352-6159 |

| | | | |
|-------------------------|---|----------------------------|---|
| Arlington | (See Fairfax) | Lee | E. T. Rasnic, Box 275, Jonesville—203 |
| Augusta | H. I. Todd, Box 446, Staunton—TU 6-9563 Dabney Wade, Rt. 1, Box 225, Fordwick— WY 7-4B96 (Thru Craigsville) | Laudaun | T. A. Daniel, Jr., R.F.D. 1, Leesburg— SP 7-1422 |
| Bath | Donald R. Miller, Rt. 2, Hot Springs | Louisa | H. T. Payne, Louisa—27B J |
| Bedford | W. W. Shields, Box 79, Bedford— Justice 6-9B27 | Lunenburg | Melvin R. Johnson, Box 63, Kenbridge— 676-2426 |
| Bland | W. W. Richardsan, Bland—MU B-3535 | Madison | R. S. Crigler, Rt. 231, Box 3-A, Madison— 948-3103 |
| Batetaurt | P. P. Monaghan, Jr., Rt. 2, Box 233A Buchanan—AL 4-2810 | Mathews | (See Gloucester) |
| | L. E. Styne, Buchanan—AL 4-5961 | Mecklenburg | G. P. Simmans, P. O. Box 24B, Clarksville— DR 4-8246 |
| Brunswick | D. L. Young, Warfield—Alberta 3511 | Middlesex | B. U. Miller, Amburg—Prescott 6-3692 (Thru Deltaville) |
| Buchanan | R. A. Smith, Grundy—Big Praetor 597-2455 | Mantgamery | J. G. John, B Park Street, Christiansburg— Evergreen 2-3539 |
| Buckingham | Malcolm Booker, Rt. 2, Gladstone— Wellington 3-6656 | Nansemand | W. S. Rountree, 544 Third Ave., Suffolk— 539-3352 |
| | C. C. Spencer, Cumberland—Woodland 9-2591 (Thru Buckingham) | Nelson | W. A. Hill, Tyro—Crestwood 7-5474 |
| Campbell | J. P. Managhan, P. O. Box 2151, Lynchburg— 239-4542 | New Kent | R. L. Griffith, Tunstall—Quintan 932-4300 |
| Caralire | Roland Eagar, Bowling Green— Melrose 3-1471 | Narfolk | E. E. Walters, Rt. 3, Box 631, Portsmouth— LI 7-3469 |
| Carroll | C. R. Chappell, P. O. Box 162, Hillsville— PA B-3923 | Narhampton | J. W. Crumb, Oyster—Cape Charles 1040W |
| Charles City | B. L. Adams, Providence Forge— Waadland 6-2510 | Narhumber- land | O. C. Crowther, Rt. 1, Heathsville— HU 2-380B |
| Charlotte | David Tharpe, Drakes Branch—Lacust B-35B3 | Nattaway | Nelson Phelps, 40B 2nd St., Blackstone—B97 |
| Chesterfield | J. R. Bellamy, 1648 Stansbury Ave., Rich- mand—BE 2-6437 | Orange | J. W. Crickenberger, Rt. 1, Box 103-AB, Orange—705B |
| Clarke | B. S. Denney, Rt. 2, Box B, Berryville—230 | Page | Robert W. Inskeep, P. O. Box 423, Luray— Riverside 3-5B79 |
| Craig | J. H. Eakin, Box 235, New Castle—B64-4119 | Patrick | T. J. Clement, P. O. Box 1, Stuart— Owen 4-2731 |
| Culpeper | C. H. Robsan, Jeffersonson—WE 7-2443 (Thru Culpeper) | Pittsylvania | S. V. Pickrel, R.F.D. 3, Box 114, Gretna— 211B |
| Cumberland | Jacob T. Newman, Cumberland | | J. A. Tramel, R.F.D. 1, Box 218, Danville— Swift 2-3014 |
| Dickensan | Otto Kendrick, Box 1B9, Rt. 3, Clintwood— 5121 | Pawhatan | McGuire Morris, Jr., Rt. 2, Box 6, Powhatan— LY 8-3073 (Thru Powhatan) |
| Dinwiddie | F. M. Fenderson, RFD 3, Box 236-0, Petersburg—Regent 2-6500 | Prince Edward | C. H. Wells, Rt. 3, Farmville—EX 2-533B |
| Essex | R. C. Hutchinson, Jr., Box 204, Tappahannock —Hillcrest 3-4974 | Prince George | Garland Foster, Prince George, Rt. 1, Box 6— Regent 3-6499 (Thru Petersburg) |
| Fairfax | | Prince William | W. L. Flory, Nakesville—Lyric 4-3293 |
| Fauquier | G. F. Altman, Middleburg—MU 7-6195 G. A. Wilkes, Blue Ridge Ave., Warrenton—347-1299 | Princess Anne | Otto Halstead, Creeds—Princess Anne 426-2961 |
| Floyd | J. W. West, Rt. 2, Floyd—Sherwood 5-5291 | | J. A. Saunders, Back Bay— Princess Anne 426-2963 |
| Fluvanna | W. M. Haden, Kents Store—Justice 9-3035 (Thru Palmyra) | | Cameron Munden, R.F.D. 1, Box 32— Princess Anne 426-23B3 |
| Franklin | G. T. Preston, Rt. 2, Rocky Maunt—Hudson 3-4581 | Pulaski | D. A. McLeod, Box 635, Dublin—674-5304 |
| Frederick | David R. Ramsey, Rt. 5, Winchester | Rappahannack | C. E. Brown, Sperryville—Yukon 7-3462 |
| Giles | Wm. T. Jamison, Pembroke—85 | Richmand | Raymond A. Little, Box 46B—Warsaw |
| Gloucester and | S. R. Stanford, Gloucester C.H.— | Raanake | H. E. Kingery, 1637 Lenox Ave., Salem— Empire 6-5225 |
| Mathews | Oxford 3-2056 | Rackbridge | E. R. Arrington, Rt. 3, Lexington— Hobart 3-5208 |
| Gaachland | S. W. Breed, Manakin—Sunset 4-5300 | Rackingham | R. E. Wilfong, 216 3rd St., Harrisonburg— 434-702B |
| Graysan | Page Clark, Independence—773-4865 | Russell | J. H. Perry, Lebanon—251 |
| Greene | | Scatt | L. O. Alley, Clinchport—HA 4-3196 |
| | | Shenandaah | Fred W. Hottle, Rt. 3, Box 1-D, Edinburg— 9B4-4654 |
| Greensville | C. L. Collins, Box 24, Star Rt., Emporia— ME 4-4370 | Smyth | W. W. Newman, Marion—ST 3-2390 |
| Halifax | R. E. Austin, Clover—Globe 4-3434 A. E. Cole, R.F.D. 2, South Boston—2-2493 | Southampton | S. V. Camp, Jr., Sebrell—Courtland 2142 |
| Hanaver | W. R. Redford, Jr., P. O. Box 13B, Ellerson— Pioneer 6-8117 | Spatsylvania | F. C. Baggs, Rt. 3, Box 143, Fredericksburg— ST 6-6461 |
| Henrica | J. J. Westbraok, R.F.D. 1, Box 14B, Sandston —Republic 7-2115 | Staffard | Darrell A. Ferrell, Falmouth—ES 3-4600 |
| Henry | E. T. Lemons, Box 1, Collinsville— Midway 7-8303 | Surry | C. N. Hunter, Surry—294-4901 |
| Highland | Allen R. Miller, Monterey—Hobart 8-2362 | Sussex | G. A. Hawks, Stony Creek—2294 |
| Isle af Wight | H. E. Munford, R.F.D. 3, Box 56, Windsor— 357-760B (Thru Smithfield) | Tazewell | J. C. Wilson, Box 4B4, Tazewell— 9B8-7655 |
| James City | G. J. Orey, R.F.D., Lanexa—LO 4-3939 (Thru Toano) | Warren | J. W. Simpsan, Box 1B0, Front Royal— Melrose 5-5189 |
| King George | Danald Zepp, Rt. 2, King George— Spruce 5-2657 | Washington | E. S. Yeatts, Meadowview— 944-3223 |
| King & Queen | C. T. Bland, Shanghai—ST 5-2828 | Westmoreland | F. E. Settle, Montrass—Gypsy 3-3430 |
| King William | G. H. Meredith, King William— Poplar 9-7451 | | |
| Lancaster | H. H. Pittman, Jr., Regina— Kilmarnock 435-4221 | | |

Wise Jesse S. Mise, Jr., 1114 Pork Ave., Norton—17
 Wythe R. M. Wolfenden, Jr., 230 11th St., Wytheville—CA 8-2353
 York E. G. Mitchell, 188 Freeman Dr., Hampton (City)
 Hampton & S. H. Mitchell, 1532 W. Queen, Hampton—Newport News 838-1157
 Portsmouth Narman B. Myers, Rt. 1, Box 108—Export 7-8145
 Richmond J. H. Hill, 2927 Chamberlayne Ave., Apt. 2—Elgin 3-2413
 Suffolk S. B. Snead, 313 Sleepy Hole Road—3902

UNASSIGNED GAME WARDEN TRAINEES

Lewis Brondt, 887 Locust Ave., Charlottesville
 Stuart P. Doggett, c/a Mrs. Everett Brown, Broadway
 Joseph J. Gillespie—Nickelsville
 Lynden T. Horris, P. O. Box 121, South Hill—HI 7-4204
 Franklin T. Mabe—Stor Rt., Box 405, Catawba
 Robert G. Mitchell—Gen. Delivery, Pembroke
 William F. Richards, P. O. Box 127, Louisa—176-J
 Jesse K. Updike, Rt. 1, Box 96, Rockbridge Boths—Fieldstone 8-5378
 Jerry D. Whittaker—Gen. Delivery, Rocky Mount

GAME DIVISION

Eastern Virginia

SUPERVISING GAME BIOLOGIST—C. H. Shoffer
 Box 203, Timberloke Road, Lynchburg—Cedor 9-1356 (R); 846-5628 (B)
 Refuge Supervisor (State Forests)—W. C. Newmon
 Cumberland—Hyacinth 2-2058
 Game Monoger (State Forests)
 S. E. Morris Route 2, Appomattox
 District Game Biologist—Herman J. Tuttle
 (Biologist in Charge, Foreign Game Introduction Program)
 Toono—Locust 4-3711
 Work Area: Accomack, Charles City, Essex, Gloucester, Isle of Wight, James City, King and Queen, King William, Lancaster, Mathews, Middlesex, Nansemond, New Kent, Norfolk, Northampton, Northumberland, Princess Anne, Richmond, Surry, Westmoreland, and York counties
 District Game Biologist—W. H. Taylor
 Rt. 3, Box 161-T, Culpeper—825-8103
 Work Area: Albemarle, Caroline, Culpeper, Fairfax, Fauquier, Greene, King George, Loudoun, Louisa, Madison, Orange, Prince William, Rappahannock, Spotsylvania, and Stafford counties
 District Game Biologist—John B. Redd, Jr.
 Box 43, Powhatan—Lyric 8-3062
 Work Area: Amelia, Brunswick, Chesterfield, Dinwiddie, Fluvanna, Goochland, Greenville, Hanover, Henrico, Lunenburg, Mecklenburg, Nottoway, Powhatan, Prince George, Southampton, and Sussex counties
 Game Manager (Camp Pickett)
 J. H. Garrett 311 Brunswick Ave., Blackstone 292-3260
 District Game Biologist—Hol W. Myers, Jr.
 R.F.D. 3, Amherst—Whitehall 6-2058
 Work Area: Amherst, Appomattox, Bedford, Buckingham, Campbell, Charlotte, Cumberland, Franklin, Halifax, Henry, Nelson, Pittsylvania, and Prince Edward counties

Northwestern Virginia

SUPERVISING GAME BIOLOGIST—J. E. Thornton
 1035 Chestnut Drive, Harrisonburg
 434-8633 (R); 434-3841 (B)
 Refuge Supervisor (Gothright W.M.A.) W. A. Huffman
 Route 1, Hot Springs—Covington 962-0229
 District Game Biologist—Max M. Carpenter,
 Rt. 1, Doyton—879-6817
 Work Area: Clarke, Frederick, Page, Rockingham, Shenandoah, and Warren counties
 Game Managers (George Washington National Forest)
 ● William H. Fadely Box 94, Mt. Jackson
 ● Sturgeon Funkhauser Basye
 ● Claude G. Higgs Route 1, Shenandoah
 ● Wiley W. Hill 1842 Maple Ave., Buena Vista
 ● Jae W. Huffer Mt. Solan
 ● Gordon H. Sauder Route 3, Broadway
 District Game Biologist—J. W. Engle, Jr.
 Rt. 1, Swoope—Stounton, TU 5-0248 (R); 885-0808 or 885-0809 (B)
 Work Area: Alleghany, Augusta, Bath, Highland, and Rockbridge counties
 Refuge Supervisor (Goshen) Jahn H. Miller—Goshen
 Game Managers (George Washington National Forest)
 ● Grattan P. Fisher Route 2, Hot Springs
 ● Roy D. Hodge Headwaters

● J. Gwin Lightner Mountain Grave
 ● Fred M. Strickler Churchville
 ● Jahn M. Wade Route 1, Fardwick
 Carpenter—Lead Man
 ● T. J. Starrett R.F.D. Star Rt., Churchville
 Tuxedo 6-0936

Southwestern Virginia

SUPERVISING GAME BIOLOGIST—Horold A. Trumbo
 1750 Victoria Street, Marwondo Park, Salem—344-3593
 District Game Biologist—Joe L. Coggin
 Box 38, Doleville—992-2415
 Work Area: Botetourt, Carroll, Craig, Floyd, Giles, Graysan, Montgomery, Patrick, Pulaski, and Roanoke counties
 Game Managers (Thomas Jefferson National Forest)
 ● Emil Amelong Goldbond
 ● Leonard F. Helms New Castle
 ● Bent C. Medley Star Route, New Castle
 ● David H. White Route 2, Bland
 ● Samuel W. Williamsan Route 1, Buchanan
 ● Elbert Wright New Castle
 District Game Biologist—Charles H. Peery
 P. O. Box 565, Tozowell—982-1192 (R); 982-6085 (B)
 Work Area: Bland, Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, and Wythe counties
 Refuge Supervisor (Clinch Mountain), C. Romon Sporks,
 Rt. 2, Soltville
 Game Managers (Thomas Jefferson National Forest)
 ● Virgil C. Boone Speedwell
 ● W. Alfred Brown Route 1, Tazewell
 ● G. Tom Burton Lang Spur
 ● Acie R. Ford Route 1, Marion
 ● S. Dan Hay Route 3, Clintwood
 ● Miller C. Meadows Long Spur
 ● Daniel N. Morehead Route 1, Marion
 ● Fred Roop Route 1, Damascus
 ● Jae Rase Tacoma

Wetlands Investigation and Development

Waterfowl Biologist—C. P. Gilchrist, Jr.,
 Box 205, Toppahannock—Hillcrest 3-4965
 Refuge Supervisors
 ● Clyde Abernathy (Hog Island Refuge) R.F.D., Surry
 ● Granville Ross (Saxis W.M.A.) R.F.D., Hallwood
 Phone: Valley 4-4605 (Thru Temperanceville)
Upland Game Investigations
Game Research Biologist—Jack V. Gwynn
 2503 Brunswick Road, Charlottesville—295-4681
Cumberland Experimental Game Form
Game Form Monoger—Dennis Hart
 Cumberland Courthouse—Cartersville, Droke 5-5632
Predator Trapper Supervisor
 Gerald T. Blonk, R.F.D. 1, Mt. Crawford—Goods Mills 9-F-30

FISH DIVISION

RESEARCH AND MANAGEMENT SUPERVISOR—Jack M. Hoffman
 2506 Moiden Lone, S.W., Roanoke
 Diamond 3-7228 (R); Diamond 2-3156 (B)
FISH CULTURAL SUPERVISOR—Dixie Shumote,
 Marion—783-4860
Eastern Virginia
Fish Research Biologist—John R. Sheridan
 R.F.D. 3, Culpeper—825-6064 (R); 825-8717 (B)
 Work Area: Albemarle, Caroline, Culpeper, Essex, Fairfax, Fauquier, Fluvanna, Gloucester, Greene, King and Queen, King George, Lancaster, Loudoun, Louisa, Madison, Middlesex, Northumberland, Orange, Prince William, Rappahannock, Richmond, Spotsylvania, Stafford, and Westmoreland counties
 King and Queen Fish Cultural Station, Stevensville—
 King William, 769-7730
 Monager—Corl P. Romsey
 District Fish Biologist—(Vacant Position)
 Work Area: Accomack, Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Goochland, Greenville, Hanover, Henrico, Isle of Wight, James City, King William, Nansemond, New Kent, Norfolk, Northampton, Nottoway, Powhatan, Prince George, Princess Anne, Southampton, Surry, Sussex, and York counties
 District Fish Biologist—Robert J. Domrose
 424 Lokewood Street, Lynchburg—846-5628 (B);
 Victor 5-1710 (R)
 Fish Management Aide—John Boaze, Leesburg Road,
 Lynchburg—239-4853
 Work Area: Amherst, Appomattox, Bedford, Buckingham, Campbell, Charlotte, Cumberland, Franklin, Halifax, Henry, Lunenburg, Mecklenburg, Nelson, Patrick, Pittsylvania and Prince Edward counties
 Montebello Trout Nursery, Vesuvius—
 377-2418 (Thru Raphine)
 Monoger—Loven V. Seomon

Western Virginia

District Fish Biologist—Richard L. Applegate
560 Lang Ave., Harrisonburg—434-4204 (R);
434-3841 (B)

Work Area: Allegheny, Augusta, Both, Clorke,
Frederick, Highland, Page, Rockbridge, Rockingham,
Shenandoah, and Warren counties

Front Royal Fish Cultural Station—Waterlick
Front Royal, ME 5-8447
Manager—W. C. (Bill) Hawley

Fish Research Biologist—Robert E. Wallitz
c/o Morion Fish Hatchery, R.F.D. 1, Morion—
783-4860 (B);

Hame: 201 Clinton Street, Marian—783-8965 (R)

Fish Management Aide—Bradley Rowles
Rt. 1, Montvale—Roanoke 947-2277

Fish Management Aide—Robert Brooks
301 S. Crowford St., Strasburg—465-3454

Work Area: Bland, Botetourt, Buchanan, Carroll,
Craig, Dickenson, Floyd, Giles, Grayson, Lee,
Montgomery, Pulaski, Roanoke, Russell, Scott,
Smyth, Tozwell, Washington, Wise, and
Wythe counties

Morion Trout Hatchery, Marion—783-4860
Manager—Dixie Shumate

LETTERS

(Continued from page 3)

Virginia Doing A Good Job

I READ with interest an article in a recent issue of a national magazine, entitled "Our Conservation Rat Holes," which seemed to be an attack on the State wildlife conservation departments, especially Ohio, Pennsylvania and the southeastern states.

I have no direct knowledge of State wildlife conservation work except in the State of Virginia, with which work I am not connected in any manner, but having a farm in Amherst County, Virginia, I am interested in wildlife and its promotion. The farm I own was in the family many years ago. Some 30 years ago to my personal knowledge there was very little game—no deer and practically no turkeys. I know the Virginia State Game Commission has been very active. I do not know its income or expenditures; I had not thought of it as being political. However, I do know that game in recent years has become fairly plentiful. Deer and turkeys are now present in good numbers; my father (who was born there and hunted a lot) told me he never saw a deer or a turkey. When I went hunting the first day of the 1961 season I flushed nine different coveys of quail on my place and the next day saw deer and turkey nearby. It occurred to me that the State was doing a good job in increasing game.

My observation of wildlife promotion in other States is that they generally have been doing a good job; how many deer and pheasants were killed in the United States in 1920 and then in 1960? I wonder if any of the State game commissions had anything to do with the increase, if any.

By quoting Federal laws and former Federal officials, the article appears to make propaganda for transferring jurisdiction of American wildlife from the States to the Federal Government. Heaven forbid! State politics are condemned as interfering with wildlife promotion; just let the power be vested in Washington and then you will learn something about politics.

A Federal officer is quoted as saying, in effect, that he could do the work of five State men. The extravagance at Washington does not bear that out. Powerful interests advocate

centralization of power in Washington so that they can deal with one person in a department in Washington rather than have to clear a particular thing through a number of State officials. These powerful interests desire that all possible powers be transferred from the State governments to the Federal Government at Washington and then in turn have these powers delegated to a world central government. Then getting control of that central world government they can run it to their own advantage.

My only disagreement with the Virginia State Game Commission is that they permit the use of dogs in hunting deer in the southern part of Amherst County and not in the northern part. I do not hunt deer with dogs, but believe it is an unreasonable discrimination.

Earl Pryor

Cheverly, Maryland

Deer in mountainous country simply cannot withstand hunting if dogs are used. Therefore this method of hunting is not permitted in the mountains. On the other hand, in the terrain that exists east of Virginia's mountains, hunting with dogs per se does not hurt the herd as the deer normally are able to "lose" the dogs after a relatively short chase. In fact experience in a few other localities in eastern Virginia indicates that more deer might be killed in the East if hunters did not use dogs. But to many the thrill of the hunt is as much in the work and music of the dogs as in the kill, and there is no advantage in denying hunters the opportunity to use a method they enjoy so long as the practice is reasonably safe and not unduly detrimental to the game.

If dogs are to be used in some portions of the state and not in others, obviously a dividing line has to be drawn. Since Amherst County contains both lowlands and mountains, it is one of the counties which is divided by this line. To use the political boundaries between counties for this purpose would provide a dividing line that would be artificial and arbitrary as far as the game is concerned, and one which hunters in the woods would have difficulty in identifying and observing.

Thank you again for your interest in and support of our program. We will continue to try to deserve such trust and confidence from our sportsmen.—Ed.

National Wildlife Magazine

ALL of us concerned with the success of our new magazine venture are deeply appreciative of the fine mention made of NATIONAL WILDLIFE on page 25 of the September 1962 issue of your Commission's magazine, VIRGINIA WILDLIFE.

I'm sure it will boost our Virginia Associate Membership total appreciably, and help us to help your organization get the conservation word across to residents of the Old Dominion.

Again, thanks very much from the Federation to you and your magazine staff for this valuable assist.

Thomas L. Kimball, Executive Director
National Wildlife Federation
Washington, D. C.

Longer Archery Season

HAVING just finished reading the "Letters" section of the September issue of VIRGINIA WILDLIFE, I would like to throw in my two-cents worth also. I have only been a Virginia

resident for three years, being a native of Missouri, but there are a few points which Missouri hunters enjoy that may be advantageous here also.

I have the archery "bug" and when deer hunting time comes around, I suppose I look as glassy-eyed as the rest of the would-be Robin Hoods. But I also enjoy gun hunting very much, which brings up the problem. Most of us manage to save a few days of our vacation to use during hunting season each year. But when should we use it, during archery or gun season? Naturally, if we want a better chance of meat in the freezer, we'll save the days for gun season, cutting our time down for bow hunting.

Here is my suggestion: Give the archers a longer season, say from October 1 through November 15. Hunting pressure is very light, no danger of depleting any deer herds, and at least six or seven weekends are available for an archer to hunt, compared to the two we have now. Here is another suggestion: allow archers to hunt on Sundays. We make very little disturbance on Sunday mornings.

Missouri bowhunting season begins on October 1 and runs through December 15—2½ months long, seven days a week.

By the way, the one deer I did manage to bring down with a bow was in Missouri. I had more time to get acquainted with my hunting area.

"Good sportsmanship" is constantly being emphasized, and what better sport is there than bowhunting? Keep up your fine work with VIRGINIA WILDLIFE.

Robert A. Honold
Alexandria, Virginia

MY wife and I think that VIRGINIA WILDLIFE is tops. I first subscribed several years ago when I fished on Lake Brittle up near Warrenton. The covers and photographs are superb, and the cover with a chipmunk by Mr. Kesteloo is hard to beat. After we are finished with our copies we pass them on to a friend who runs a nursery school for nature study.

I notice that you say that the chipmunk is only found east of Michigan except in the deep South. They are not unknown in Mississippi although not common. A few years ago there were several that made their home in the wood pile on the porch of our cabin in southern Utah. Also, a great many years ago when we were staying under canvas up in the Timagami country of northern Ontario, my wife would throw the bacon drippings on the ground near the tent and the chipmunks would eat the dirt to get the salt.

Why doesn't the Old Dominion reduce the 70-year age requirement for a free fishing license? After 70 a man does not have many more fishing days left.

John L. Turner
Gulfport, Mississippi

The chipmunk's range does extend into northern Mississippi and well above the U. S. border into eastern Canada. We feel as you do that Virginia's elder citizens should be given a break, but why pick on fishing licenses? Why not free car registrations, free drivers' licenses, or free passes to the movies? The Game Commission is financed by the sale of hunting and fishing licenses, and every dollar lost is one less that can be put to work in the all-important job of improving and preserving our wildlife resources.—Ed.

WHEN DEER GET TOO NUMEROUS... *this is what happens*



OVER-BROWSING



CROP DAMAGE

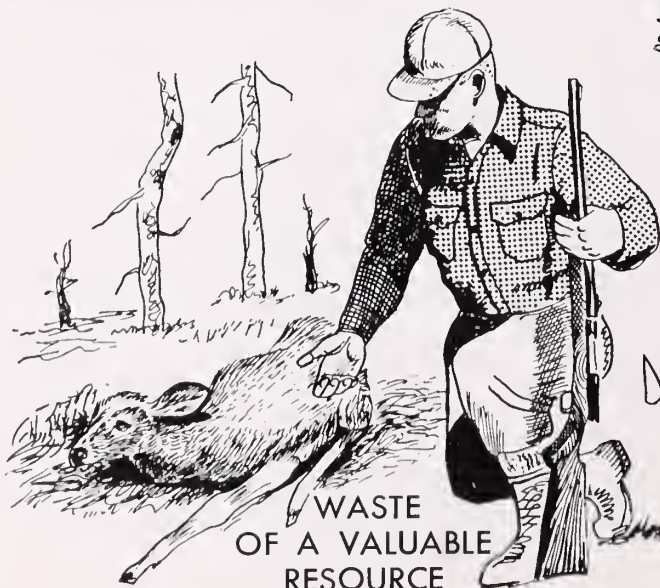
GOOD DEER
MANAGEMENT
CAN PREVENT THIS.
DOE, AS WELL
AS BUCKS, SHOULD
BE HARVESTED.



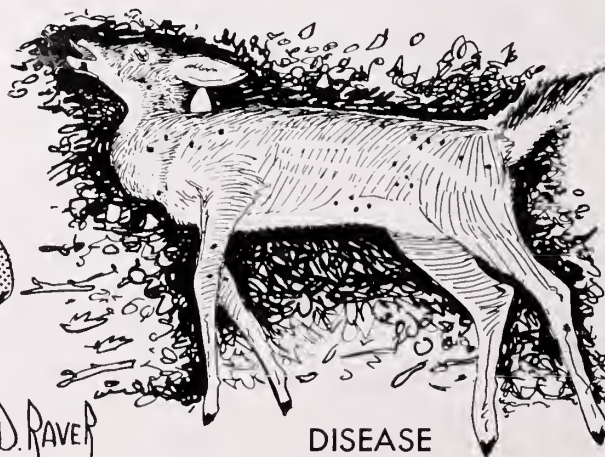
MALNUTRITION



POOR TROPHY VALUE



WASTE
OF A VALUABLE
RESOURCE



DISEASE

D. RAPER